



The Bulletin of the NATIVE PLANT SOCIETY OF OREGON

1981

Vol. XIV No. 1

January 1980

Chapter Calendars

PORTLAND CHAPTER

Meeting: Mon. Jan. 12, 7 p.m., Central Library, 801 SW 10th Ave., Portland. An Evening With Plants of the Siskiyou, Robert Mansfield of Grants Pass, speaker. Mr. Mansfield, retired Staff Officer of Lands from the U.S. Forest Service, spent many years working in the Siskiyou National Forest. His map of the Kalmiopsis Wilderness Area is well known to many NPSO members. This will be an exciting program, so do come and bring a friend.

Workshops: All meet 10:00 a.m. in Central Library. We have room E during Jan. All the Feb. sessions convene in the big meeting room.

Sat. Jan. 10 -- Oregon's Rare Plants with Dr. Janet Hohn, Regional Botanist with the Endangered Species Office of U.S. Fish and Wildlife Service, Portland. Dr. Hohn will show slides and discuss why the species are so important.

Sat. Jan. 17 -- Gov't Programs under the Endangered Species Act with Bonnie Heidel of the Endangered Species Office of U.S.F. & W. Service, Portland.

Sat. Jan. 24 -- Rare Plants of the Willows with Bonnie Heidel. Ms. Heidel will include pictures of Silene spaldingii and Mirabilis macfarlanei which have been featured in previous Bulletin articles.

Sat. Jan. 31 -- Rare Plants of the Klamath Mountains with Dr. Janet Hohn. Dr. Hohn will show us plants as Calochortus Greenei and Lewisia cotyledon and others from the botanically diverse S.W. corner of the state.

Sat. Feb. 7 -- Member's slides. Bring in a few of your unidentified subjects for diagnosis by a panel of plant pundits. Or test the panelists with some of your known favorites.

Sat. Feb. 14 -- Ferns of Oregon with Roger Yerke. Our knowledgeable fern master will present a lively and instructive program on getting to know our pteridophytes.

SISKIYOU CHAPTER

Meetings: Thurs. Jan. 8, 7:30, Room 171, Science Building, SOSC, Ashland -- The Pines seedsman Frank Sesock, speaker

Thurs. Feb. 5, 7:30, Room 171, Science Bldg, SOSC, Ashland -- The Physiology of Flowering, Dr. Ronald Nitsos, Assoc. Professor of Biology, Southern Oregon State College, speaker.

WELCOME TO NEW MEMBERS

Willamette Valley Chapter
Stan and Marie Townsend, Salem
J. Morris Johnson, Monmouth

High Desert Chapter
Ann Wyant, Bend
Harvey Waldron, Jr., Bend
Teresa Jones, Bend
Helen H. Ballard, Sunriver
Stuart G. Garrett, Bend
Barbara J. Robinson, Bend
Christy Steck, Prineville

Emerald Chapter
Steve L. Timme, Springfield

Siskiyou Chapter
Robert Jochums, Jr., Jacksonville
Paula S. Vincetn, Klamath Falls
D. David Montgomery, Ashland
Robert E. Wille, Eagle Point

Portland Chapter
Debbie A. Lopez, Portland
Loris Joline Shroyer, Canby
Judith Thompson Schneider, Milwaukie
Marnie McPhee, Portland

PROTECTION FOR PENSTEMON PECKII

A wildflower, Penstemon Peckii, that apparently grows only in the Sisters area will be protected through the joint efforts of Hudspeth Sawmill Company and Deschutes National Forest personnel. The plant has a very limited range and distribution, between Bend and Mt. Hood.

Penstemon Peckii is proposed for "threatened status on the Threatened and Endangered Species List. This plant was found on the Lake Creek Timber Sale after it was sold but before it was logged. The timber sale purchaser, Hudspeth Sawmill Company of Prineville, agreed to modify the contract to include protection of the plant. This agreement was a result of

PROTECTION FOR TWO RARE PLANTS IN THE BLACK HILLS



Penstemon peckii

a study being done by Chinook Research Labs of Corvallis, Oregon in cooperation with the Hudspeeth Sawmill Company, the Deschutes National Forest, Oregon Rare and Endangered Plants Species Task Force, and the U.S. Fish and Wildlife Service. The multi-year study will analyze such things as plant numbers and locations, and survival requirements. Logging activity on dry ground will be analyzed to determine plant reaction to various levels of disturbance and possible management alternatives. Upon completion of this initial phase of the study, management plans for further research and protection of the plant will be developed.

The Threatened and Endangered Species List is an outgrowth of a 1976 Act of Congress to protect rare and endangered plants and animals in the U.S. It is administered by the U.S. Department of Interior in cooperation with other federal and state agencies and interested organizations. Examples of threatened and endangered animals include the bald eagle, peregrine falcon, Columbia white tail deer, brown pelican, and the gray wolf.

The Forest Service is directed, by the above-mentioned Act, to evaluate all ground disturbing activities for the presence of threatened and endangered species. This is done in the early planning phases of projects. If a species is found and the activity impacts the habitat adversely, alternatives activities are proposed. This is done to minimize impact on the habitat.

Past known sites of unusual plants are presently being searched on the Deschutes to determine if the plants are still present and to establish their numbers. Approximately 67 different trees, shrubs, and wildflowers comprise the working list on the Deschutes National Forest.

As briefly reported in last month's *Bulletin*, the Black Hills in northern Lake County was permanently closed to off-road vehicles (ORV) in October of 1980 by the Bureau of Land Management (BLM). The purpose of the 1,740-acre closure is to protect a candidate threatened plant species, *Eriogonum cusickii* (Cusick's buckwheat).

The Black Hills, located just south of the town of Christmas Valley, rises to about 5,200 feet, 700-900 feet above the valley floor. The Black Hills are late Pliocene in age (about 4-7 million years) and are composed chiefly of volcanic tuffs. The Hills are covered in a juniper woodland with *Artemisia tridentata*, *Agropyron spicatum*, and *Festuca idahoensis*.

Eriogonum cusickii, a member of the Buckwheat Family (Polygonaceae) was named for William C. Cusick (1842-1922), a pioneer botanist of Eastern Oregon. This species is a low growing cushion-like perennial plant with pale yellow flowers in loose corymbose-umbels. In an immature stage *Eriogonum cusickii* can be confused with *E. prociduum* another candidate threatened plant species. *E. prociduum* differs in having flowers arranged in compact heads and a range further to the south and east of the Black Hills. *Eriogonum cusickii* is known from only three locations in the world all within a 120 miles of Burns in the northern part of southeastern Oregon. At the Black Hills site, this species grows in very shallow rocky soils which are nearly devoid of shrubs and trees. Other perennial and annual herbs that occupy this site are: *Hymenopappus filifolius*, *Balsamorhiza serrata*, *Gilia congesta*, *Dimeresia howellii*, and *Allium parvum*. This site is covered with football-size and smaller rocks which gives the area a "moonscape" appearance. It is these larger rocks which have protected this site from heavy four-wheel drive use.

Another rare plant species found scattered in the Black Hills is *Cymopterus bipinnatus* (Hayden's cymopterus). This species is identified in "Rare, Threatened, and Endangered Vascular Plants in Oregon—an interim report" as threatened. *Cymopterus bipinnatus*, a member of the Parsley Family (Apiaceae), is a tufted perennial herb with highly divided basal leaves and white flowers arising on long stems (peduncles) in compact umbels. This species is known mainly from Steens Mountain in Oregon where it inhabits high, rocky ridge tops. The species is more common in states to the east of Oregon.

Some past vehicle use has caused damage to the fragile soils and the rare plants in the Black Hills. The intent of the closure is to act early enough in protecting a species to prevent its having to be listed. Protection of these rare plants is not guaranteed by the closure. Education and public support and cooperation are also necessary for the closure to be effective in preserving the rare plants and their habitats. Two roads have been left open into the area to provide access for non-vehicular recreation. We encourage you to visit the area and welcome comments on the effectiveness and future management of the closure.

Anyone interested in receiving a copy of the Black Hills Management Plan please contact me. Your opinion is very important in making good multiple-use management decisions.

Ginny Crosby
District Botanist
BLM, P.O.B. 151
Lakeview, Oregon 97630
947-2177



Eriogonum cusickii

THUMB-INDEXING YOUR FLORA

Here it is, January. This is the time of the year when plant watchers organize their slides and go to family reunions instead of out to the woods. If you are such a person, already anticipating the coming of spring so you can get out and work on some particular plant you have photographed but not yet identified, you are ready for a project which will hone your plant skills and be a great aid in field identification. All you need is a scalpel with a #11 blade or an X-acto knife with a #11 blade, obtainable from artist and crafts supply outlets.

Take a look at a quality dictionary or bible and notice the round notches, the thumb-indices, which allow you to go right to a particular page. Now, put the same things on the important families in your flora. I use Hitchcock's *Flora of the Pacific Northwest*, and have prepared illustrations of my field copy as an example. The critical thing is to index those families which are important to you; the ones treated here represent my first effort at selecting the most commonly encountered families. There are too many families to index all; the theory is that if you understand the traditional system of plant families, it should be possible to figure out approximately where an un-indexed family is. (Frank Lang reminds me that this theory will not work with Munz's *A Flora of California*.) One of the families I would index in a second effort, but skipped in the first, is the Gentianaceae. Note also that in Compositae four important genera are indexed in addition to the page where the family begins. Space has been left for a similar treatment of the grasses, but I have not yet decided which genera to index.

The simplest procedure might be to use the illustration with this article as a guide, modifying them or not to suit your fancy. With the front cover of the book face-down on a table, align the side opposite the binding with the edge of the table. Clamp all of the pages below the one you are starting from with one hand while carving the notch with the other. Make curving half cuts through the pages, first from one side and then the other. The direction of the cuts is indicated on the "Index" notch. Note that to make the second illustration, I bent the pages of the book so they spread apart enough to have the family labels (mostly abbreviated) copy on a copy machine. (The illustrations are natural size.) The notches are approximately 5 mm deep and cut through 5 mm of pages. It will take a bit of practice before you can make nice, professional looking

(see page 5 for illustrations of the thumb index)

notches. It will not be easy unless you have a new, razor-sharp blade. Be careful you don't cut yourself! I recommend a fine-pointed drawing pen and India Ink for writing the labels. In order to figure out where to write the label, turn the book over and use the first page of the notch as a mask.

Hopefully, these directions will be clear if you do as suggested earlier: study a dictionary or other book which has machine-made thumb-indices. It took me all afternoon to do what is shown in the illustrations. Although four hours' work might seem like a lot of time to spend improving a book, its utility will amply repay you when keying out some strange little alpine gen on a mountain ridge. When you are sitting in a meadow full of new (to you) flowers, you don't want to spend your time flipping pages to the index in the back, fussing with page numbers, then finally getting to the Rosaceae.

Two final recommendations: 1) If your flora is getting a battering in the field and you don't want to spend money getting it re-bound, try two-inch duct tape. It is ugly but more durable than any other tape I have yet tried, and is easily applied. 2) Put a check-mark in the margin beside each species on the rare list or on the review list. The latter are especially important, since new information is desperately needed to determine the status of these. I will supply the current Natural Heritage Council list to anyone who sends me a stamped, self-addressed envelope.

Dave Wagner

NEW BOOKS

In case Santa didn't treat you right here are two books you might consider. The Audubon Society Field Guide to North American Trees: Western Region is a part of the photographic series published by A. Knopf (\$9.95). The author, Elbert Little, has written many books and articles on trees. This book covers the native, naturalized, and commonly cultivated species west of the Rocky Mountains with excellent color photographs of bark, leaves, flowers, and often, fruits. The book is very good, although the arrangement of the conifer pictures is something of a mystery with unrelated species found side by side. The book would be more useful if one, two, three and five needled pines were placed together, my greatest complaint is use of common names only for picture captions. Minor faults aside, like the use of *Libocedrus* instead of *Calocedrus* for the Incense-cedar genus and leaving the Noble Fir-Shasta Red fir mystery in SW Oregon a continuing enigma, the book is a must for western tree lovers.

The second book is for advanced students. Volume II of the Biota of North America series published by the University of North Carolina Press is a synonymized checklist of the Vascular Flora of the United States, Canada and Greenland. It is a list of 56,941 names of vascular plants and synonyms as compiled by the authors John and Rosemarie Kartesz and a host of reviewers and cooperating specialists. This is the place to look to see what happened to that name you used to know. This is where I discovered that the Diamond Lake *Frittilaria*, *F. adamantiana* is now considered to be *F. atropurpurea*. The book is useful if you are interested in such things and can afford the more than \$20.00 price.

F. A. Lang

PLANT FAMILY PROFILES

By Herm Fitz

The Lentibulariaceae - BUTTERWORT or BLADDERWORT FAMILY

The Lentibulariaceae is a small, cosmopolitan family of carnivorous plants, best developed in the Tropics, though extending well into temperate regions. Of the family's four genera, only two are represented in Oregon (a third is entirely Australian; the 4th is restricted to central and south America and Africa): A single circumboreal species of Butterwort (*Pinguicula vulgaris*) may be found on wet rocks, in bogs or wet soil in the mountains south to southern Curry County; three circumboreal species of Bladderwort (*Utricularia*) occur in ponds, bogs, slow streams, lakes and marshes throughout Oregon into California.


All members of this family are herbaceous with irregular flowers. The united corolla is 2-lipped, as in the Mint Family (NPSO Bulletin, March, 1980) and Scrophulariaceae (NPSO Bulletin, February, 1980), with which the Lentibulariaceae is closely allied. The upper lip is 2-lobed, and the lower lip is 3-lobed and spurred. All have 2 stamens, attached near the base of the corolla throat, each with only a single pollen sac. The pistil consists of a superior ovary of 1 locule with one-to-many ovules attached by free-central placentation. The sessile stigma bears two lobes. A capsule which usually splits into valves is the common fruit. Plants are all of moist habitats.

Notable differences exist, however, between our two genera. Butterwort is a fibrous-rooted terrestrial plant with a basal rosette of simple, entire leaves generously covered with digestive glandular hairs. Flowers are solitary on bractless scapes and bear 5 calyx lobes, also in a bilabiate fashion. The corolla throat is open. Bladderwort, on the other hand, is a rootless, submerged and floating aquatic plant with alternate, apparently dissected (leaf morphology in *Utricularia* is not fully understood) leaves bearing tiny bladders which trap and digest small aquatic insects and crustaceans such as the water flea. Several flowers are arranged on an emergent raceme, each subtended by a small bract, and each bearing only 2 calyx lobes. The corolla throat is closed by a swollen palate (also found in Scrophulariaceae).

The glandular hairs of Butterwort digest insects on contact much as in the Sundew. The tiny traps of the Bladderwort are functionally more involved, and have been described by Mabberly (1978):

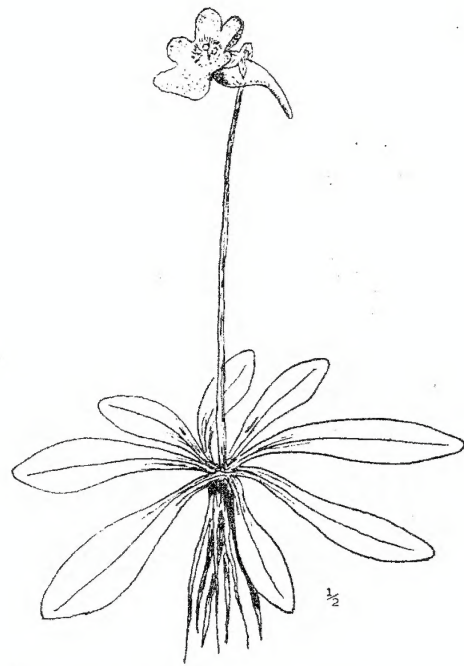
"The traps consist of a hollow bag borne at the end of a stalk, with a small entrance near to or opposite the stalk. Around the entrance are usually some projecting bristles, so arranged that an insect or crustacean passing the bladder will tend to be guided towards its mouth. The entrance itself is closed by a hermetically sealed semicircular valve which bears four hairs. If these are touched the valve is triggered and the rush of water draws the animal inside."

The generalized Family floral formula is:

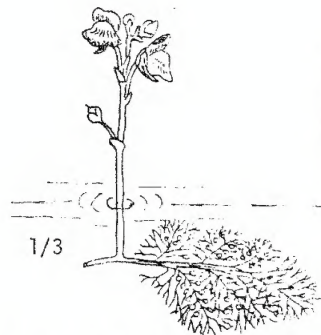
Ca² or 5 Coz  S² p^②

Next time you visit a bog, or a pond or marsh, or other moist or aquatic habitat, look for these interesting carnivorous plants, the members of the Lentibulariaceae - the Butterwort or Bladderwort Family.

Reference: Mabberly, D.J. Lentibulariaceae. In: Heywood, V. H. (Ed.). 1978. Flowering Plants of the World. Mayflower Books, New York.



Butterwort (*Pinguicula vulgaris*). Note the single scapose flower, open-throated, bilabiate and spurred, with 2 stamens. Succulent, glandular-haired (insectivorous) leaves are arranged in a basal rosette. Note also the true roots.



Common Bladderwort (*Utricularia vulgaris*). Plant is rootless, floating aquatic with submerged leaves, apparently dissected, with tiny carnivorous bladders. Flowering raceme is emergent. Note that flower throat is closed by a swollen palate.

THUMB INDEX YOUR FLORA (see page 3)

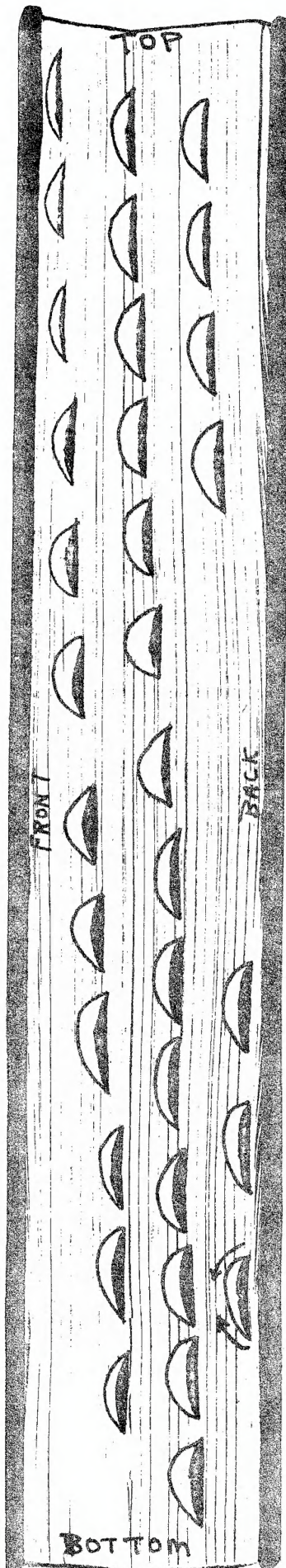


Figure 1

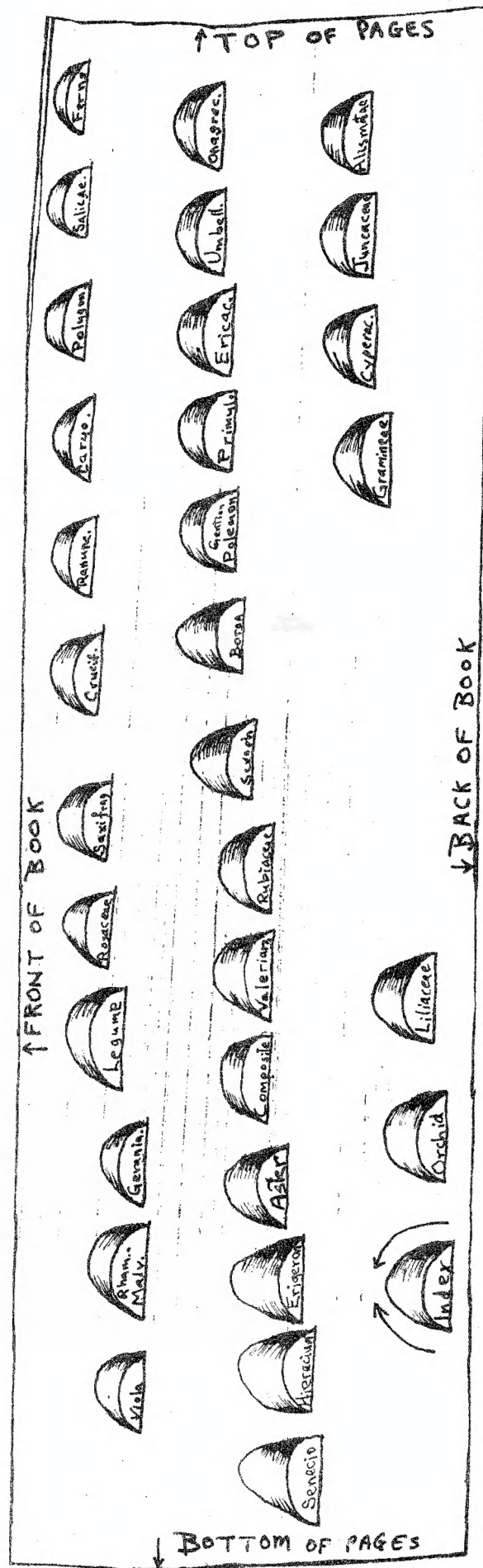
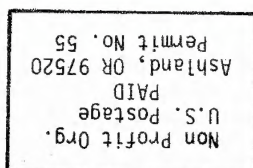


Figure 2

ABOUT THE ILLUSTRATOR

Julian Lacalle is a Science-Math Master's candidate in general studies at Southern Oregon State College. His major is biology with special interest in biological illustration. He holds a BA in zoology from the University of California at Berkeley.



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Contributions to the NPSO Bulletin or non-delivery notice should be sent to: The Editors, Native Plant Society of Oregon, Department of Biology, Southern Oregon State College, Ashland, Or 97520

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The Bulletin of the NATIVE PLANT SOCIETY OF OREGON

Vol. XIV No. 2

February 1981

ANNUAL MEETING

Look for an announcement in next months Bulletin. Tentative plans are to have the meeting hosted by the Mid Columbia Chapter some Saturday in May, (a beautiful part of the State at a beautiful time of the year.)

CHAPTER CALENDARS

PORTLAND CHAPTER

Meeting: Mon. Feb. 9, 7:00 p.m., Central Library, 801 S.W. 10th, Portland. Some Wild Plants of the Kangaroo Country, Frederick Dragger, speaker. Since retirement, Mr. Dragger has spent a great deal of time traveling and photographing wild flowers. His slide presentation with a lap dissolve unit makes this an especially interesting and beautiful program.

Workshops: All meet 10:00 a.m. in Central Library. Convene in the big meeting room.
Sat. Feb. 7 -- Members' Slides. Bring in a few of your unidentified subjects for diagnosis by a panel of plant pundits. Or test the panelists with some of your known favorites.
Sat. Feb. 14 -- Ferns of Oregon with Roger Yerke. Our knowledgeable fern master will present a lively and instructive program on getting to know our pteridophytes.
Sat. Feb. 21 -- Some Plants We Don't See Every Day with George Lewis.
Sat. Feb. 28 -- Alpine Plants with Keith Chamberlain.

Field Trip: Sat March 7 -- Forest Park. Leader undesignated. Meet in Macleay Park parking lot on NW Cornell Road at 9:30 a.m.

HIGH DESERT CHAPTER

Meeting: Tues. Feb. 3, 7:30 p.m., Room B-10, Bend High School. Techniques Used in Wild-flower Photography. All interested persons are invited to attend.

SISKIYOU CHAPTER

Meetings: Thurs. Feb. 5, 7:30, Room 171, Science Bldg, SOSOC, Ashland. The Physiology of Flowering, Dr. Ronald Nitsos, Assoc. Professor of Biology, SOSOC, speaker
Thur. Mar. 5. same time and place. Wild-flowers: Your Favorite Fotos. Frank Lang and Vern Crawford will complete last years' photo workshop by enjoying your photos. Bring a few of your favorites to share. This is also our annual business meeting: election of officers.

THE JIG IS UP!!

This will be your last issue of the Bulletin if you have not paid your dues.

NOMINATIONS FOR NEXT YEARS NPSO OFFICERS

Due to an oversight by your NPSO president the Nomination Announcement is a month late. In order to stay on schedule and keep with the society By Laws we will add any new names with a brief biography submitted by any group of five or more paid members to the ballot which will be published in the March Bulletin. The ballot will consist of all the nominees and their biographies.

The nominating committee of Janet Hohn, Chairman, Annie Kowalishen, Virginia Crosby and Charlene Holzwarth have submitted the following slate of nominees.

President: David Wagner -- Curator the University of Oregon Herbarium, President of the Emerald Chapter, NPSO. Very active, Professional Botanist, co-author of Rare, Threatened and Endangered Vascular Plants of Oregon, member of the Natural Heritage Advisory Council.

Vice President: Annie Kowalishen -- Member of the Portland Chapter, Chairperson of the NPSO Endangered Plant Committee, Chairperson of the Western Native Plant Society.

Secretary: Paula Vincent -- Part-time Botany student and previous professional secretary, conducted a rare plant survey for the Fremont National Forest, Member of the Siskiyou Chapter.

Treasurer: John Christy -- Former chapter treasurer, a B.S. in general science, worked as a Botanist for BLM and Nature Conservancy, very interested in mosses, a member of the Emerald Chapter.

Board of Directors:

Veva Stansell -- Former Board Member, did a study on Darlingtonia for the U.S. Fish and Wildlife Service, a very knowledgeable botanist of the Oregon Coast, member of the Siskiyou Chapter.

Cynthia Roberts -- Forestry technician with BLM and Forest Service, a very active member for 4 1/2 years in the Siskiyou Chapter.

Stuart Garrett -- Former Portland member and botany major in college, now a practicing physician, working on a plant list for the Metolius River Preserve, founding member of the High Desert Chapter.

Mary Falconer -- Current NPSO membership Chairman, former President of the Mid-Willamette chapter. Active in the Orchid Society, self taught botanist interested in the locating and photographing native orchids. Charter member of the Mid-Willamette Chapter

I would like to thank the nominating committee for the great job they did in putting together this fine slate of nominees on such short notice. Thanks also to the nominees for their willingness to serve.

F.A. Lang
NPSO, President

1980 NOTICE OF REVIEW FOR T & E PLANTS

The U.S. Fish and Wildlife Service has published the long-awaited Notice of Review for vascular plants of the United States which are candidates for Threatened or Endangered status under the Endangered Species Act of 1973.

There are approximately 3,000 plant species for the Nation currently under review. All plant species listed in the new Notice, which updates three previous Notices, are candidates for Endangered or Threatened status and as such must be considered in environmental planning.

The public is invited to comment on the Notice and is encouraged to provide additional or new information on any of the candidate species. Comments are welcome in the Portland Office or Washington, D.C. Office of Endangered Species.

Copies of the 1980 Notice of Review, published December 15, are available from:

U.S. Fish and Wildlife Service
Endangered Species Office
Lloyd 500 Building, Suite 1692
500 N.E. Multnomah Street
Portland, OR 97232

HIGH DESERT CHAPTER IS ACTIVE

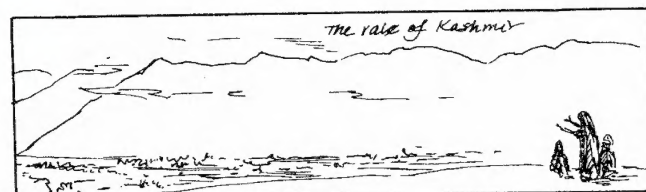
Endangered Plants were the topic for the January 6th meeting of the High Desert Chapter (Central Oregon Area). Joyce Bork shared her slides and knowledge with the fifteen members present.

Plans are being made to assist The Nature Conservancy in completing a plant list for the recently acquired Metolius River Preserve--an interesting area of spruce forest, fen and riparian habitats. Members also plan to assist the Deschutes National Forest in developing a brochure on local endangered plants.

Interested persons are invited to attend the Chapter's monthly meetings which are held the first Tuesday of each month at 7:30p.m. in Room B-10 of Bend High School. February's meeting will be devoted to techniques and equipment used in wildflower photography.

JOIN THE HIMACHAL PRADESH/KASHMIR BOTANICAL EXPEDITION

\$100 of your cost of attending this exciting trip will go directly to NPSO. So plan to join the group May 5-29 1981. The program in India will be hosted by an Indian Botanist who will accompany the group during the entire trip. Four days will be spent in Delhi with a tour of the city included. Ten days botanical trekking in the Himachal Pradesh, with porters, tents, cook & kitchen help, all meals, and sherpas, will follow. At the return of the trek, we will go further north to Srinagar and explore the region and gardens of Kashmir. Our program will reach an end in Delhi after the flight from Srinagar. A day's rest at Janpath, then the group will board the plane for the return flight. An optional two-day visit to the Taj Mahal, red fort, and Bharatpur Bird Sanctuary.
Land Cost: \$1450
Airfare: \$1250 (east coast slightly less. Subject to change).
For information, contact Folkways International Trekking, Inc. 14903 S.E. Linden Lane, Milwaukie, OR 97222. telephone (503) 653-5882.



LUPINUS TRACYI REPORTED

Two Curry and Josephine County Lupinus collections made by Lilla Leach have been identified as the rare Lupinus tracyi, previously known only from California. Species annotations of the two collections were made in December by Dr. David Dunn, Lupinus authority and curator of the herbarium at the University of Missouri-Columbia.

Lupinus tracyi Eastwood is characterized as an herbaceous, glabrous perennial, having 6-7 leaflets and whitish, 10mm. flowers in terminal racemes. The banner is shorter than the wing petals, the keel lacks bristles along its upper edges, and the whitish fruits appear shaggy. Its habitat has only been briefly described as openings in or edges of forests.

The collections were made between Game Lake and Snow Camp (Curry Co.), and along Dry Ridge on the Free and Easy Trail, ca. 4,500 ft. (Josephine Co.) It has yet to be confirmed whether these populations are extant. They are certainly worthy topics of search and further investigation in the coming field season.

Bonnie Heidel and Janet Hohn,
Botanists
Endangered Species Office
U.S. Fish and Wildlife Service
Portland



A BOTANIST VIEWS THE "SPECIES PROBLEM"

The term "species", and the concept it stands for, have been important to the science of biology since long before anyone bothered to call it a "science". Yet even today, discussions among biologists on so simple a question as, "what is a species?", invariably get bogged down in confusion and argument. The layperson, who is an outsider to the sophisticated debates of the biologists, might be surprised to learn of these disagreements over the term "species". Practising taxonomists, on the other hand, are acutely aware that the "species" described in our floras and manuals are by no means conceptually similar from genus to genus (nor from book to book!). Perhaps this brief discussion by a botanical taxonomist will make clear some of the factors involved in the problem, and will get more people interested in working towards a solution.

It seems to me to be quite significant that modern science inherited the concept of "species" from the languages and folk-taxonomies of pre-scientific human cultures. It is a common sense observation that the large, familiar organisms (especially animals) which humans have observed and domesticated since time immemorial are of recognizably different "kinds" (species). We suppose that in each species, the members have the same interrelationships as do members of a human family or tribe. That is, males and females of each species mate among themselves to produce offspring, as do their offspring in turn, generation after generation. "Like begets like"-- what could be simpler? Goats are one species and sheep are another, simply because goats and sheep can't and won't interbreed.

This prescientific notion of species worked well in its day, just like the notion of a flat earth worked fine for the needs of mankind for a very long time. But I believe it is a serious error for present-day biologists simply to dress this ancient concept in modern clothes and try to make it universally applicable. By this, I mean that a concept which worked well for goats and sheep, for horses and cows, and even (though less well) for dogs and wolves, may not be suitable for oaks and dandelions, for mushrooms and lichens, and for diatoms and bacteria. It is no accident that the examples I just quoted are generally (in common parlance) called "plants" -- because I want to emphasize that it is often very difficult to fit plants into zoologically defined categories. One cause of the "species problem", I think, is that zoologists mostly insist that only animals are valid models for defining the biological species concept (n.b.: mankind is itself a species of animal, so we have a bias on this point). If plants don't fit the concept, they say, then too bad for the botanists (not "too bad for the concept").

I don't wish to debate here whether the "biological species concept" of the zoologists (using the criterion of interbreeding, mentioned above) works as well as expected in the animal kingdom. Even some zoologists dispute that it does. Instead let me suggest several reasons why such a concept is not workable for many kinds of plants. There are three main points to be made, all of which concern the methods of reproduction that occur among plants:

(1) Many plants avoid animal-like sexual reproduction; instead, they produce offspring asexually (by cloning) or by self-fertilization.

(2) Many plants are promiscuous in their reproduction and will cross-fertilize (hybridize) with related species wherever and whenever the opportunity exists.

(3) Many plants have rearranged their genetic information, through chromosomal mutations or multiplications, so that individuals which look alike and live in the same habitats may be almost totally incapable of interbreeding.

Dandelions (genus Taraxacum) are a textbook example of asexual plants. The common, weedy types are sexually sterile and make seeds by cellular processes that completely circumvent fertilization. Certain non-weedy dandelions, on the other hand, are sexually fertile, while still others can alternate between sexual and asexual phases. Purely asexual reproduction, as well as mixed breeding behaviors, are common throughout the "plant kingdom," from bacteria and fungi, through mosses and ferns, to even the most advanced seed plants. In Oregon we have good cases of asexual groups in the genera Antennaria, Arnica, Crepis, Poa, and Potentilla, while self-fertilizing complexes occur in Amsinckia, Festuca, Limnathes, Montia, Oenothera, and Polygonum, among others. In eastern North America, asexual types are notoriously abundant in Crataegus, Hieracium, and Rubus.

We can also easily document numerous examples of plant breeding behavior that involves hybridization of quite dissimilar "species". Oregon's flora, while not exceptionally rich with such hybrids, nonetheless provides case studies in the genera Abies, Arctostaphylos, Balsamorhiza, Artemisia, Aster, Ceanothus, Hieracium, Iris, Sidalcea, and Spiraea, for example. Elsewhere in North America, famous hybrid swarms occur in Aquilegia, Atriplex, Baptisia, Helianthus, Juniperus, Phlox, Purshia, Quercus, Salix, Salvia, Tridescantia, Viola, and so on, ad infinitum.

Proving the third kind of phenomenon I listed, which is the absence of interbreeding between closely similar individuals, often requires detailed genetic research. But from many well studied cases, we can confidently assert that plants which have a similar morphology (and thus seem to be part of the same "species") may often be intersterile or may produce genetically aberrant offspring after cross-fertilization (the botanical equivalents of the mule). Conspicuous examples occur in the families Onagraceae (genera Oenothera and Clarkia), Poaceae (genus Elymus), Polemoniaceae (genus Gilia), and Asteraceae (genera Holocarpha and Lasthenia), and in literally scores of genera in which multiplication of chromosomes by "polyploidy" is frequent. Oregon's examples of genera whose taxonomy is afflicted by such genetic complexities include Artemisia, Aster, Castilleja, Dodecatheon, Lupinus, Montia, Penstemon, Phacelia, Polypodium, Polystichum, and Vaccinium, to name only a few.

It would not be accurate to claim that botanists themselves agree on a particular "species concept" which will work in all the difficult genera just mentioned, and in all the hundreds not mentioned. Far from it; in fact, species concepts differ considerably from one taxonomist to another. There is a feeling among some taxonomists (myself included) that it is not even necessary, scientifically speaking, to have a single species concept that is uniformly applicable to all plants.

The search for a universal species concept may have become a quest for the Holy Grail. It would be best to abandon that quest, and consider instead the proposition that many different kinds of "species" may exist. More accurately, we should ask (1) what are the kinds of plant groupings which evolution produces, and (2) which of these natural groupings should we attach the label "species" to. In effect, this is what botanical taxonomists regularly must do anyway, whenever the plants they are studying show the kinds of reproductive and genetic pattern I described above.

For better scientific communication, we should develop a set of terms defining all the different kinds of plant groupings that we will choose to call "species." Much work needs to be done, and it will be difficult to get agreement among biologists on these terms and definitions. At present, we can continue to make do with our standard morphological species concept, based principally on the observed similarities and continuities in form and structure among related plants. This approach is already in use by the vast majority of practising plant taxonomists. It is ambiguous and imprecise, but it provides practical and useful classifications. A completely "scientific" species classification for plants lies quite far in the future.

Kenton L. Chambers
Botany Department
Oregon State University

PLANT FAMILY PROFILES

By Herm Fitz

The Betulaceae - BIRCH FAMILY

Although the Betulaceae is a rather small family (about 170 species in 6 genera), representatives are widespread and abundant throughout the north temperate zone, and some species extend into tropical mountains and into the southern hemisphere in the Andes Mountains of South America. We have only three of these genera in Oregon. The Western Hazel (*Corylus cornuta*) is widespread in woods chiefly west of the Cascades. Three species of Birch (*Betula*) can be found here and there: Swamp Birch (*B. glandulosa*) thrives along stream banks, around marshes, lakes or bogs, or on alpine slopes mostly east of the Cascade Crest; Western Birch (*B. occidentalis*), also chiefly east of the Cascades, may grow along streams or in moist spots in forests; Paper Birch (*B. papyrifera*), whose bark was used by Indians to make canoes and artistic items, extends from the north into moist woods and lower elevation mountain slopes of northeastern Oregon. Four species of Alder (*Alnus*) are found along stream banks, at the margins of ponds and lakes, or on moist slopes in the mountains: Red Alder (*A. rubra*) at lower elevations west of the Cascades; White Alder (*A. rhombifolia*), on both sides of the Cascades; Mountain Alder (*A. incana*), from lowland foothills to well up in the mountains (Cascades, Blue Mountains, and Siskiyou); and Thin-leaved Alder (*A. sinuata*) at or near timberline mainly in the Cascades and Blue Mountains.

This family consists of trees and shrubs. The leaves are simple, alternate, and deciduous, with characteristic pinnate veins and serrate (toothed) margins. Male and female flowers are separate from each other, but on the same plant; the plants are thus "monoecious." These small and inconspicuous flowers appear in early spring, generally before the leaves, and are pollinated by the wind while branches are still bare. Groups of male flowers are in characteristic pendulous catkins, or aments; groups of female flowers are borne on a stiff axis, often held erect. Flowers are subtended by small bracts, and the perianth (sepals and petals) is represented by 0 to 4 scale-like segments. [Note: It may even surprise you that these inconspicuous, colorless, scentless, nectarless structures are actually flowers, but, though they are a far cry from the Trillium, stamens and pistils are present, and seeds are produced - they therefore qualify.] It takes a hand lens to see the actual arrangement: With each bract of the catkin, male flowers occur singly and without a perianth (*Corylus*) or in groups of 3 or 6 with a perianth (*Betula*, *Alnus*). In *Corylus* each flower has 8 stamens, and that's it. Male *Betula* flowers each have 2 stamens; male *Alnus* flowers each

have 2 or 4 stamens. The female flowers are very difficult to dissect and observe, but each has a bicarpellate inferior ovary associated with each bract, and the perianth is either present (*Corylus*) or absent (*Betula*, *Alnus*). The female catkin matures to a cone-like structure with numerous tiny winged or wingless nutlets, either persistent and scattering the fruits (*Alnus*), or deciduous as a whole with the ripened nutlets (*Betula*). In the Hazel, a large nut develops within papery bracts; the cultivated filbert is a close relative and familiar example.

Now we may write the floral formula, in this case a different one for each sex:

Male flower: $Ca^{0,2,3, \text{ or } 4} Co^0 S^{2,4, \text{ or } 8} p^0$

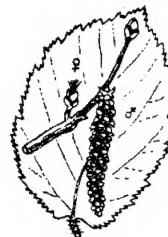
Female flower: $Ca^0 \text{ or } 4 Co^0 S^0 p^{(2)}$

This may seem a bit overwhelming, but if you carefully dissect the catkins under magnification, you will see and verify these structures.

In spring, when you discover a monoecious tree or shrub with catkins, with simple, alternate leaves that show serrate margins and pinnate veins, and if the fruit is developing into a woody cone-like structure or a large nut enclosed by papery bracts - you can be certain that it is a member of the Betulaceae - the Birch Family.



Leaf and flowers of Red Alder (*Alnus rubra*). Note the distinct pinnate veins, the clustered male catkins, the erect female catkin and last year's "cones."



Leaf and flowers of Western Hazel (*Corylus cornuta*). Note the doubly serrate margins, the single male catkin, and the single, bud-like female catkin with small protruding (purple in nature) stigmas.

SHARE IT WITH US

Reading the journals of early plant explorers permits us the exciting speculation, if we are fortunate enough to go into the same meadows and mountains they have described -- could this be the very slope where Douglas or Clark or Henderson collected a new species?

Not all such discoveries are "before our time". The type locality is of record, but the field notes or journal (does anyone keep a real journal any more?) of recent years are not much in print. The following article by Floyd W. McMullen printed in the bulletin of Berry Botanic Garden (Fall, 1989), includes first-hand knowledge of *Corydalis aquae-gelidae*, which is on the rare, threatened and endangered list compiled by the Oregon Task Force.

Let Floyd's story be a good example: those who were involved in or know the circumstances of such first-sightings should be recording them (and letting the NPSO Bulletin share the knowledge).

Louise R. Godfrey

A RARE NATIVE

Corydalis aquae-gelidae was planted in June of this year in the Garden. It bloomed and is still alive. It is early to say if the Garden stream location can meet the exacting needs of the Cold Water *Corydalis*. Seeds have been sent to several locations, including England. I am not aware of this plant's successful cultivation anywhere to date.

C. aquae-gelidae is a handsome plant of blue-green ferny foliage. It has a branched raceme with up to 40 rosy blooms on the main raceme. Its beauty certainly puts it near the top of the genus. The real puzzle: why the late recognition of it as a distinct species?

The earliest evidence of its "discovery" was a 1942 report of *C. cusickii* from Tanner Creek. Later visits to Tanner Creek, in the Columbia Gorge, turned up only *C. scouleri*. What is believed to be *C. aquae-gelidae* has now been reported from a Tanner Creek tributary.

The official description of *C. aquae-gelidae* was the result of a three-man team trip to the Clackamas River in 1946: Warren Wilson, a "youngish" botanist and rather recent migrant to the Northwest; Stanley Anderson, who probably had crammed more northwest plant lore into his head than any other man alive at that time; and I, whose main qualification was enthusiasm.

A gravel bar about a half mile upstream from the Collawash River junction was our discovery situation and is the type location for *C. aquae-gelidae*. A few plants were at the early bloom stage and prompted Warren's question. What were we seeing? Enthusiastically I replied we were seeing a *corydalis*, obviously not *C. scouleri*, therefore *C. cusickii*. Stanley quickly demonstrated that enthusiasm is a poor second to knowledge. The nearest *C. cusickii* was probably in Blue Mountains. Also our plants did not fit his concept of *C. cusickii*. Warren prepared herbarium material which he took to Morton E. Peck at Willamette University. Professor Peck later named and published the new species as *C. aquae-gelidae*.

Ron Burnett of the Mazamas and the Native Plant Society has recently catalogued the efforts of many persons and all the localities where *C. aquae-gelidae* is known to grow. Unfortunately the type location is not on the list. It was washed out in the big flood of 1964.

C. aquae-gelidae is now officially listed as Endangered. This is a direct result of the work done by Ron, Jean Siddall and others working on the Rare and Endangered Species project.

Floyd W. McMullen

(Drawing by Kathleen McMullen)



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Contributions to the NPSO Bulletin or non-delivery notice should be sent to: The Editors, Native Plant Society of Oregon, Department of Biology, Southern Oregon State College, Ashland, Or 97520

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The Bulletin of the NATIVE PLANT SOCIETY OF OREGON

Vol. XIV No. 3

March 1981

ANNUAL MEETING PLANS STILL TENTATIVE

Reserve the weekend of May 2 or 9, 1981 as the possible date of the annual meeting at the local Grange Hall at Mosier, Oregon. Two field trips are planned; on Saturday before the meeting in the Mosier area and on Sunday across the River in Washington. A meeting of the new board will be held early Sunday at a restaurant in Hood River. FINAL DETAILS (COSTS, TIMES, HOUSING INFORMATION, SPEAKER, ETC.) WILL BE PUBLISHED IN APRIL BULLETIN.

CHAPTER CALENDARS

WILLAMETTE VALLEY

Meeting: Monday March 16, 7:30 p.m., Carrier Rm., of the First United Methodist Church, State and Church Streets, Salem. The program will be a showing of colored slides. Bring a few of your favorite pictures of native plants or even landscapes. Up to ten pictures is an acceptable number.

SISKIYOU

Meeting: Thurs. March 5, Rm. 171, Science, SOSOC Ashland. Wildflowers: Your Favorite Fotos. Frank Lmag and Vern Crawford will complete last years' photo workshop by enjoying your photos. Bring a few of your favorites to share. This is also our annual business meeting: election of officers.

Thurs. April 2, Rm. 171, Science, SOSOC, Ashland. Oregon Caves N.M. and Bigelow Lake, Vern Crawford, speaker, slides of scenery, plantlife, wildlife in this beautiful area.

PORTLAND

Meeting: Mon. March 9, 7:00 p.m., Central Library 801 S.W. 10th, Portland, Rediscovering the Lewis and Clark Trail, Botany and History. The program deals with the natural history of the Lewis and Clark Expedition with an emphasis on the botanical aspects of the journey. The program is the result of an interdisciplinary program of history and natural history of the Lewis and Clark Expedition. It will be presented by Dr. Ed Florence, PhD in Botany and on the staff of Lewis and Clark College.

Field Trips: Sat. March 7 -- Forest Park. Leader undesignated. Meet 9:30 a.m., in Macleay Park, N.W. Cornel Road.

Sat. March 14 -- Horsethief Lake and Vicinity. Ruth Hansen, leader. Meet 8:30 a.m. at Lewis and Clark State Park.

Sat. March 21 -- Rock Island and Environs. Dr. John Hammond, leader. Meet 9:30 a.m., at Tri-Met's Handyman park and ride lot 15550 S.E. McLoughlin Blvd and Risley Ave. in Oak Grove.

Sat. March 28 -- Deschutes River Canyon. Keith Chamberlain, leader. Meet 10:00 a.m., near Tighe Valley at the intersection of highways 197 and 216.

Sat. April 4 -- No trip scheduled.

Sat. April 11 -- Three Lynx Area, Clackamas River. Dr. George Jeffcott, leader. Meet 9:00 a.m., Handyman park and ride lot, Oak Grove, as above.

TAKE ME TO YOUR (NEW) LEADERS

Your editors request each chapter to send in to the NPSO Bulletin the names, addresses, and phone numbers for each officer newly elected for 1981. We will want to reprint this information to all members and to update the list of presidents given monthly in the Bulletin. Please send this to us as soon as your election takes place, and in any event by our April 15 deadline. Thank you,

Frank Lang and Vern Crawford

PLANT IDENTIFICATION COURSE OFFERED

A non-credit course in Plant Identification will be offered spring quarter by Portland Community College at Rock Creek. Classes meet on Tuesday evenings 7-10 PM beginning March 31 and ending June 2. Hitchcock & Cronquist, 1973, Flora of the Pacific Northwest is the required text. If you have questions, contact Janet Hohn (503-231-6131) or Portland Community College, Rock Creek (503-645-4461).

T/E ALERT

Gratiola heterosepala Mason & Bacig. (Hedge-Hyssop) has been reported for the first time from Oregon. This annual member of the Scrophulariaceae was known only from central California where it occupies lake shores until the summer of 1980 when Dr. Noel Holmgren of the New York Botanical Garden collected it in Lake County, Oregon. This taxon is noted by the California Native Plant Society as "Rare and Endangered" (Inventory of Rare and Endangered Plants of California, April 1980) and is a candidate species for Threatened status as determined by the Fish & Wildlife Service (FR, Part IV, December 15, 1980).

Aster paludicola Piper (Western Bog Aster) was originally collected on Eight Dollar Mountain in Josephine County, Oregon, and the original description was published in Contributions to the U.S. National Herbarium 16:210. 1913. In his 1943 publication on the Aster foliaceus group (Cronquist, N. Am. Spp. of Aster centering about Aster foliaceus Lindl., Am. Midl. Nat. 29: 429-468), Cronquist had only the type specimen for reference and placed it in synonymy under the common and widespread species Aster occidentalis (cf. Munz, P.A. 1959. A California Flora, pp. 1198-1199). In recent correspondence to Dr. J.P. Smith, Dr. Cronquist says, "Since then I have seen a few (very few) more specimens at one place or another, and I am now convinced that it is distinct. It differs from Aster occidentalis in being glabrous throughout and in having relatively few (about 13 or less) ray flowers Aster paludicola also has an unusual habitat, it likes to grow in Darlingtonia bogs."

The Fish & Wildlife Service recognizes A. paludicola as a candidate for Federal listing (FR, December 15, 1980) and gives the historical distribution as California and Oregon.

Comments and information regarding these two Endangered plants are invited.

Janet E. Hohn, Ph.D.
Staff Botanist
Endangered Species Officer
Portland, Oregon

WELCOME NEW MEMBERS

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SISKIYOU

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HIGH DESERT

Carolyn Wright
Louise Burgess
Wendell Thompson

All our native plant species are not terrestrial as the following article by Mariana Bornholdt indicates. Look for Part II next month.

BOUNTY FROM THE SEA Part I

Mariana D. Bornholdt ©1980

Our richly varied Pacific Northwest coastline nourishes an incredible abundance of marine life. Where sand, rocks, mud, and cliffs meet the restless surf, and fresh waters mingle with salty in estuaries and bays, a true biological "edge" results. Here, as with other "edges" in nature, speciation proliferates, and our marine plants, the Algae, encompass an enormous range of form, color, size, and life cycle unmatched by terrestrial plants.

Algae are distinguished from other photosynthesizers principally by their lack of a true vascular system. That is, algae lack roots, stems, and leaves for the transport of nutrients; they live in and are supported by a fluid medium, the ocean. Algae are literally bathed in nutrients. In addition, algae do not flower or set seed, but reproduce by other means: by rhizome extension and by tiny motile gametes or spores. Though our coastal waters do contain a few flowering plants known as seagrasses, the most common being Phyllospadix (surfgrass) found on rocks just below the surfline and Zostera (eelgrass) which grows in quiet muddy bottomed bays, the marine flora of the seashore, known as seaweed, are members of the Algae Kingdom.

Algae are classified and named according to color: blue-green, green, red, brown, and golden. Each color group or phylum is well-represented among the marine algae, although the majority of seaweeds (Macroalgae) belong to the brown, red, or green phyla.

Enucleate (lacking a true cell nucleus) single-celled individuals of various blue-green species (phylum Cyanophyta) are common in floating matlike or frothy aggregates in cliffside seepage areas just above the high tide line. The marine blue-green algae are believed by many biologists to be ancestral to all living forms on the earth; fossil species over two billion years old have been found. Their closest relatives today are the bacteria. Cyanophyta are of little culinary interest.

The bright green algae (phylum Chlorophyta) are believed to be the ancestral stock from which green land plants evolved. They are most closely related to the mosses and liverworts. Like the familiar terrestrial plants, their dominant photosynthetic pigment is green, their food reserves are stored as starches and sugars, and their cell walls are cellulosic. Most Chlorophytae are found only in tropical seas, but a number are cosmopolitan. Ninety species occur here. Three are quite common:

Monostroma arcticum (awo-nori) ranges here from Alaska to Washington, occurring in green sheets or blades only one cell thick, attached to small stones or other plants in sheltered brackish bays. It is cultivated in the Orient, dried, and ground or flaked for use as a condiment. Fresh young fronds are tender; dried plants have a nut-like flavor.

Ulva lactuca (sea lettuce) grows in bright green, thin, crinkly sheets attached to rocks or other algae in the upper intertidal zones and in brackish water. It is also worldwide in distribution. Its fragile leaves are delicious raw when finely chopped in salads. Lightly steamed, it is an unusual green vegetable with a high ascorbic acid (Vitamin C) content. It is most tender when collected in early Spring. Dried, it is used throughout the world in various cuisines, as a condiment, garnish, brewed into tea, used in soups, stews, and in combination with other vegetables.

Enteromorpha intestinalis (green nori) is also found on rocks or in pools near the upper tide mark in coastal waters all over the world. Its contorted blades are a slippery yellow-green. Fresh or sundried, toasted, crumbled, or powdered, it is an important condiment or vegetable for all native Pacific peoples. The Kwakiutl Indians called it "ihixlhewis" and considered it a delicacy.

Golden algae (Chrysophyta) consist of several sub-groups, most marine forms being very small unicellular plants. A few form filamentous colonies, and there are many planktonic species. Generally seen as a thin scummy brown, olive, or yellow-brown growth on the surfaces of rocks, shells, wood, mud, and other algae, Chrysophytae are of little culinary interest. However, one group, the diatoms (Bacillariophyceae), have cell walls composed largely of silica, and the persistent skeletons of these microscopic plants form a significant component of beach sands all over the world.

(Continued)

MANAGEMENT ALTERNATIVES READY FOR REVIEW

After two years of study and data collection, we (Salem District, BLM) have developed proposed land use alternatives for 159,898 acres of BLM land in Linn, Marion, Clackamas and Multnomah Counties. The alternatives, which we are asking you to review, are five different combinations of land uses and management practices.

Following public review and comment, the District Manager will select either an existing alternative or develop a new alternative to serve as the proposed land use plan. Final acceptance of the plan for the Eastside Planning Area will come after environmental assessment. The new plan will determine how BLM lands will be managed, including the amount of timber to be cut, for the next 10 years.

Meetings will be held in Molalla and Lebanon to explain and discuss the alternatives. The more controversial and important concepts included in some of the alternatives will be presented in depth. These include "Recreation Lands" designations for Table Rock and the peninsula of Green Peter Reservoir, intensive timber management practices, preservation of older forest wildlife habitat, designation of areas open and closed to off road vehicles and timber management on fragile, thin, or easily erodible soils. We invite you to come to one of these meetings and give us your ideas on the alternatives.

Identical sessions will be held from 2-5 pm and 7-9:30 pm at the following locations and dates:

Molalla
Monday, March 16
IOOF Hall (above Ernie's Home Furnishings)
108 S. Molalla

Lebanon
Tuesday, March 17
City Hall, 2nd floor Council Chambers
925 Main St., corner of Main and Maple

To encourage public comment on the alternatives, we have prepared a summary with maps explaining and showing how the land would be managed under each alternative. It includes a mail-back for your comments, choice of alternatives or suggestions for revisions. Your comments will be accepted at the meetings, or you may drop them off or mail them

to our offices. All comments must be postmarked by April 3, 1981, so that we can begin work on a decision.

Copies of the summary can be obtained by calling or stopping by our office in Salem, 1717 Fabry Road S.E. (399-5634).

The alternatives ranges from an emphasis on protection of special values (watershed, fisheries, wildlife, recreation, visual, cultural and botanical) to an emphasis on timber production. Alternative A consolidates "optimum" recommendations for special values while Alternative E designates all land for intensive timber management except those acres protected by law or regulation. The other 3 alternatives fall somewhere in between. Key features are:

TIMBER MANAGEMENT: Alternative E designates 130,000 acres for intensive timber management. The only set asides are rare plant habitat, cultural sites and existing recreation sites. In contrast, Alternative A allocates 70,000 acres for intensive timber management with an additional 54,000 acres harvested every 200-350 years.

RECREATION LANDS: Alternative A withdraws 12,000 acres from timber harvest at Table Rock and Green Peter peninsula for recreation. Under Alternative E, no land would be managed exclusively for recreation except for the 7 existing recreation sites.

OLDER FORESTS: Alternatives A and B retain older forest wildlife habitat by managing 45,000 and 16,000 acres respectively on 200-350 year harvest cycles. Alternatives C and D eliminate long harvest cycles but preserve 11,000 and 1,800 acres of older forest respectively. Alternative E does not set aside any old growth although some old trees would remain in recreation sites and watershed protection zones.

Congress instructed BLM to identify and manage Areas of Critical Environmental Concern (ACEC's). ACEC's are areas where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

ACEC's on the Eastside of the Salem District will be selected and designated as part of this planning process. If you know of an area on BLM land that you feel needs special designation and management, we invite you to nominate it for ACEC consideration.

Nominations should include a map or legal description of boundaries and a description of the relevance and importance of its cultural or natural features. Include as much documentation as possible and mail to our office at the address below by April 3. For more information call 399-5634.

United States Department of the Interior
Bureau of Land Management
Salem District
P.O.B. 3227
Salem, Oregon 97302

PLANT FAMILY PROFILES

By Herm Fitz

The Cruciferae - MUSTARD FAMILY

The Cruciferae is a large family of nearly 3000 species in 380 genera scattered throughout the world, mostly in cool north temperate regions. Representatives are especially abundant around the Mediterranean Basin and in southwestern and central Asia, and found only sparingly in the southern hemisphere, with few in the tropics. The family is economically noteworthy as it provides many table vegetables (cabbage, Brussels sprouts, broccoli, cauliflower, collards, kale, kohlrabi, rutabaga, pakchoi, turnips - almost all from the genus *Brassica*), salad greens and garnishes (radish, water cress), condiments (horseradish, mustard), fodder for livestock, oils, and garden ornamentals (wallflower, honesty, candytuft, sweet alyssum, stocks, rockets, and others). The Cruciferae, sometimes called Brassicaceae, is well represented in Oregon, with about 150 species in 45 genera occupying many types of habitat: sandy shores and rocky headlands, cultivated fields and gardens, shady woods, disturbed roadsides, volcanic peaks, mountain slopes and ridges, sagebrush steppe, juniper forest, or wherever you wander. Some of the most familiar are the Rock Cresses (*Arabis*), Winter Cress (*Barbarea*), Field Mustards (*Brassica*), Sea Rocket (*Cakile edentula*), Shepherd's Purse (*Capsella bursa-pastoris*), Bitter Cresses (*Cardamine*), Tansy Mustard (*Descurainia*), Whitlow Grass (*Draba*), Wall Flowers (*Erysimum*), Peppergrass (*Lepidium*), Bladder Pod (*Lesquerella*), Water Cress (*Rorippa*), Wild Radish (*Raphanus*) - to name only a few. Though the family is quite diverse, the characteristics are strikingly constant - it is easy to recognize a member on sight.

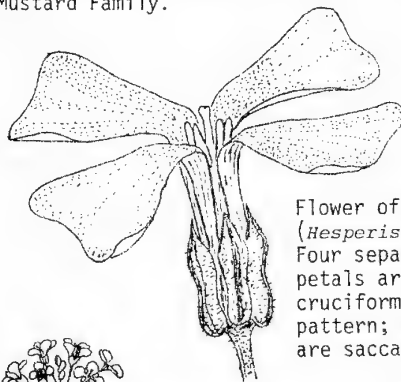
All crucifers in Oregon are herbaceous annuals, biennials or perennials and typically contain easily tasted, spicy oils reminiscent of the cultivated vegetables. The leaves may vary from simple to compound, then pinnate, and are often in a basal rosette. Stem (cauline) leaves are alternate, without stipules, and sometimes tend to be clasping. The inflorescence is most often a simple bractless raceme, that is, pedicelled flowers from a common stalk, the peduncle. Individual flowers, often tiny, are consistently 4-parted. The sepals are in two alternating pairs, the outer pair occasionally convexly swollen (saccate) at the base and containing nectar. The free, usually clawed, petals (rarely lacking) are arranged in a regular way to form a cross (termed "cruciform") - hence the family name. Six stamens, in one outer pair with short filaments (missing in some *Cardamine*) and two inner pair with long filaments, make the "tetradynamous" arrangement unique to the family. Outer filaments are sometimes winged or have tooth-like appendages. The pistil consists of a superior ovary of 2 united carpels, with 2 locules separated by a false septum (the "replum"), and ovules are attached by parietal placentae. The stigma may be capitate or bilobed.

The resulting fruit is also 2-chambered and usually splits from below, each valve lifting from the septum releasing seeds from one or two rows in each locule. There is considerable variation in fruit size, shape, proportion, cross-section, direction of flattening, curvature, or beak-like style - which becomes important in distinguishing genera. You should be forewarned that in order to key successfully many members of this family, you will need fruits developed sufficiently to judge these characters. An elongate fruit, 3 times or more longer than broad, is called a silique (siliqua); a shortened fruit, less than 3 times longer than broad, a silicle (silicula). Most fruits are one

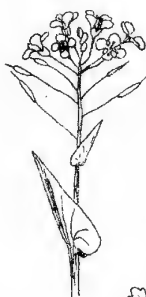
of these two types. Sometimes the fruit becomes transversely constricted and jointed and is called a loment. All three types are unique to the family. The floral formula for Cruciferae (ignoring the very few exceptions) is universally:

$$Ca^4 \quad Co^4 \quad S^4 + 2 \quad p^{(2)}$$

So when you find an herbaceous plant, perhaps tending to have basal leaves in addition to the alternate cauline leaves, with a raceme of cruciform flowers having tetradynamous stamens, each flower maturing to a 2-chambered silique or silicle - and if the chewed leaf reminds you a bit of cabbage - you probably have a member of the Cruciferae - the Mustard Family.



Flower of Dame's Rocket (*Hesperis matronalis*). Four separate clawed petals are arranged in cruciform (crosslike) pattern; outer sepals are saccate at base. 3x



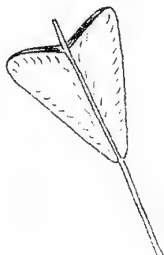
Sprig of Common Field Mustard (*Brassica campestris*) showing siliques, larger flowers, auriculate-clasping cauline leaves and typical racemose inflorescence. 1/3x



Stamens and pistil of Dame's Violet or Dame's Rocket (*Hesperis matronalis*) showing the tetradynamous stamen arrangement. 5x



Sprig of Little Western Bitter Cress (*Cardamine oligosperma*). Note the tiny flowers (each with only 4 stamens!), elongate siliques and pinnately compound leaves. 1/2x



Silicle of Shepherd's Purse (*Capsella bursa-pastoris*). Fruit is shortened. 3x



Silique of Common Field Mustard (*Brassica campestris*). Fruit is elongate. 2x

Native Plant Society of Oregon

BALLOT

Please mail this ballot to:

NPSO ELECTION COMMITTEE
Department of Biology
Southern Oregon State College
Ashland, OR 97520

by April 15, 1981

No new nominations have been received.

Vote for one

- ☐ President: David Wagner -- Curator of the University of Oregon Herbarium, President of the Emerald Chapter NPSO, very active Professional Botanist, co author of Rare, Threatened, and Endangered Vascular Plants of Oregon, Member of the Natural Heritage Advisory Council.
- ☐ Vice President: Annie Kowalishen -- Member of the Portland Chapter, Chair person of the NPSO Endangered Plant Committee, Chairperson of Western Native Plant Society.
- ☐ Secretary: Paula Vincent -- Part-time Botany student and previous professional secretary, conducted a rare plant survey for the Fremont National Forest, Member of the Siskiyou Chapter.
- ☐ Treasurer: John Christy -- Former chapter treasurer, a B.S. in general Science, worked as a Botanist for BLM and Nature Conservancy, very interested in mosses, a member of the Emerald Chapter.

Vote for three (Board of Directors)

- ☐ Veva Stansell -- Former Board Member, did a study on Darlingtonia for the U.S. Fish and Wildlife Service, a very knowledgeable botanist of the Oregon Coast, a member of the Siskiyou Chapter.
- ☐ Cynthia Roberts -- Forestry technician with BLM and Forest Service, a very active member for over 4 1/2 years in the Siskiyou Chapter.
- ☐ Stuart Garrett -- Former Portland member and botany major in college, now practicing physician, working on a plant list for the Metolius River Preserve, founding member of the the High Desert Chapter.
- ☐ Mary Falconer -- Current NPSO membership chairman, former President of the Mid-Willamette Chapter. Active in the Orchid Society, self taught botanist interested in the locating and photographing of native orchids, Charter member of the Mid-Willamette Chapter

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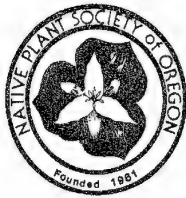
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For change of address or information on membership, contact your nearest chapter or Mary Falconer, 1920 Engle Ave., NW, Salem 97304

Contributions to the NPSO Bulletin or non-delivery notice should be sent to: The Editors, Native Plant Society of Oregon, Department of Biology, Southern Oregon State College, Ashland, Or 97520

The NPSO Bulletin is published monthly by the Native Plant Society of Oregon incorporated under the laws of the State of Oregon. You are invited to join. Membership includes Bulletin subscription. Dues are student \$5.00, regular member \$7.50, Sustaining member \$25.00, Patron \$100.00, Life member \$500.00. Others are welcome to use material from the NPSO Bulletin. Courtesy pleads, however, that credit be given to the author and to the Bulletin.



The Bulletin of the NATIVE PLANT SOCIETY OF OREGON

Vol. XIV No. 4

April 1981

ALL WELCOME TO THE NPSO ANNUAL MEETING

The annual meeting will be at the Mosier Grange in Mosier, Oregon, at 6:30 pm on May 9, 1981. The cost will be \$6.00 per person, and reservations should be in our hands by May 1. Please, send reservations to Keith Chamberlain, POB 217, Mosier. It is very important that we receive the reservations so that the cook can order supplies for everyone.

The following accommodations are available in the area:

Memaloos State Park, 3 miles east of Mosier
phone 478-3336

Vagabond Motel, 407 Westcliff Drive, H.R.
phone 386-2992

Hood River Inn, Hood River Village
phone 386-2200

Other motels are available in Hood River and The Dalles.

Carl Urban will be our speaker for the evening. He is an instructor at Blue Mountain Community College, and he will show slides and discuss some of the rarer plants of the Steens, Blue, and Wallowa Mountains. The exact title is not known at this time.

Saturday's field trip will leave from the Grange Hall at 10:00 am. It will be in the Mosier area. Astragalus hoodianus and Lomatium suksdorfii will be some of the rarer plants to be seen.

Sunday's Directors meeting will be in The Dalles. The location will be announced Saturday night. A shorter field trip to the Washington side of the river will follow this meeting. The Exact route of this trip will depend upon how the season advances; details will be announced at the banquet.

Send reservations by May 1.

Keith Chamberlain

AMENDMENT TO THE BY-LAWS

Because of the importance of the editor of the NPSO Bulletin and the state membership chairman the Board of Directors is proposing the following change in the By-Laws.

Article 7: Section 1

Insert "elected" between "the" and "officers"

Section 7: (a new section)

The state membership chairman and editor of the society bulletin shall be appointed by the president, with the approval of the

Board of Directors. Duties of these offices will be proscribed by the Board of Directors. Both shall be ex-officio members of the Board of Directors.

The vote on this amendment will be held at the annual meeting in Mosier, Oregon on May 9th.

LEGISLATIVE UPDATE

A proposed draft for an endangered species protection bill, based upon one adopted by the state of Michigan, has been submitted to 5 members of the Environment and Energy Committee of the Oregon House. Tom Throop (Bend), Gretchen Kafoury (Portland), Larry Campbell (Eugene), Rick Bauman (Portland), and Wayne Fawbush (Hood River) have agreed to read the bill and consider its introduction by their Committee during this session. Introduction by the Committee requires sponsorship by 4 Committee members. NPSO members living in any of the above-mentioned districts are encouraged to contact their representatives to urge support of this measure. Corinne Sheraton of the Willamette Valley chapter is acting as our liaison in Salem.

Ann Whitmyer

WELCOME TO NEW MEMBERS

Portland Chapter

Mrs. Elved P. Walker, Portland
Oregon Natural Heritage Program, Portland
Clair F. Stahl, Portland
Mr. & Mrs. Victor Paschal, Beaverton
Ruth J. Douglas, Portland
Alise Augenstein, Portland

High Desert Chapter

Allan R. Chambers, Bend
Scott Sweet, Bend
Ron Halvorson, Prineville
Suzanne Crowley, Prineville

Siskiyou Chapter

Dr. James Payne Smith, Jr., Arcata, CA
Dr. Louise Antz, Ashland

CHAPTER CALENDARS

HIGH DESERT CHAPTER

Field Trips

- Sat. April 18 -- Steelhead Falls in the Deschutes River Canyon, which is being considered for wilderness designation in the BLM Review, will be our destination. This will be a joint trip with the Sierra Club. Meet at the Bend MacDonalds at 8:30 or Redmond Big-O lot at 9:00 and bring a sack lunch. Leader is Stuart Garrett (382-2681).
- Sat. May 2 -- An update of the Metolius River Preserve Plant list will be the object of this outing. Bring a sack lunch and meet at MacDonalds lot at 9:00. Leader is Joyce Bork (389-5657).

SISKIYOU CHAPTER

Meeting

- Thurs. April 7, 7:30, Rm. 171, Science, SOSOC Ashland. Oregon Caves N.M. and Bigelow Lake, Vern Crawford, speaker. We will see slides of scenery, forest, plantlife, and wildlife, from this beautiful area of southwestern Oregon. Do you know someone who would enjoy our chapter? Now's a good time to invite them.

Field Trip

- Sat. April 25 -- Agate Desert, Lisa Hirsch and Shelley Tanquary, leaders. Meet 8:00 Ashland Bi-Mart or 8:30 Medford K-Mart.

EMERALD CHAPTER

Meeting

- April 6. Plant Photography. Chris Luneski, prize winning photographer and arranger of slide/sound programs, and Malcolm Manley, photographer and Emerald Chapter member, will team up to present a session on equipment, techniques, materials, and "tricks of the trade" for successful nature photography. Meet at 7:15 pm, Eugene City Library.
- May 4 -- Dr. Franklin "Herm" Fitz, biology instructor McKenzie River High School, Emerald Chapter member, and author of NPSO Bulletin "Plant Family Profiles", will share some of his experiences and frustrations of putting together a Flora of the McKenzie drainage area. Herm will show slides illustrating his research and discuss the mechanics of preparing herbarium specimens. Meet at 7:15 pm, Eugene City Library.

Wildflower Classes

Beginning March 31, 7-10 pm, Charlene Simpson, Emerald Chapter President, will teach the Lane Community College adult education (non-credit) class on Northwest Wildflower. Refer to the LCC Spring Schedule of Classes for further details.

Linda Johnson, Emerald Chapter Vice President, will teach a wildflower class sponsored by Lane Community College and Willamalane Parks and Recreation Dist. in the Thurston area, Thursday evenings, 7-10 pm, beginning April 2. Refer to the LCC Spring Schedule of Classes for details.

Rhoda Love, Emerald Chapter member, will teach a field course in Wildflower Identification through the Eugene Parks and Recreation Department. The class will meet Wednesdays, 9-12 am beginning April 15, at the Amazon Recreation center. Watch for Eugene Parks and Recreation Spring publication for registration info.

Wildflower Walks

Dr. Dave Wagner, Director of the U of O Herbarium and NPSO President, nominee, leads a weekly wildflower walk through Alton Baker Park beginning March 5 thru June 11. Meet at the north end of the footbridge over the Willamette River near Autzen Stadium at 12:30 every Thursday -- Rain or shine. Call 686-3033 for further information.

Linda Johnson will lead a weekly wildflower walk from Hendrick's Bridge Wayside beginning April 1 (Wednesdays) from 5:30-6:30 pm.

Wildflower Show

The Emerald Chapter will sponsor a table of wildflower bouquets, R,T & E-photographs, and membership promotional at the Eugene Garden Club Show, Saturday and Sunday, April 11 and 12 in the Valley River Mall, Eugene.

WILLAMETTE VALLEY CHAPTER

Field Trips

- Sat. April 11 -- Cold Trail, Cascade Head, Wally Eubanks, leader (581-9569).
- Sun. April 26 -- Coast Range Scolioopus, Larry Scholefield, Mariana Bornholdt, leader (585-2057).
- Sat. May 2 -- Rickreal Ridge/Morris Johnson, Clint Urey, leader (743-2802).
- Sat. May 9 -- 4-H Center/Audubon Nature Trail, Gus Rockafellar, leader (581-5866).

Contact trip leader for details.

Next Meeting

Third Monday in September, details to be announced in August Bulletin.

PORTLAND CHAPTER

Meeting

Mon. April 13, 7:00 pm, Central Library, 801 S.W. 10th, Portland, Notes on Plant Communities of Sycan Marsh. The program deals with the Oregon Natural Heritage Program inventory of the Nature Conservancy's 28,000 acre Sycan Marsh Preserve located NE of Klamath Falls. Slides and talk will be presented by Lynn Cornelius, botanist for Natural Heritage Program, and John Hoffnagle, Oregon Land

Steward for the Nature Conservancy.

The focus of our field trip program will be changing a bit this year:

First of all, we plan to use some of the outings to explicitly search after some of Oregon's 400+ "rare" plants. This alone is not a striking departure from past field trips, but we hope to carry this one step further - to occasionally look for plants which are no longer known to exist here. For instance, Bob Mienke will lead a trip into Finley Wildlife Refuge on 25 April in search of Castilleja levisecta which has not been sighted (in Oregon) for 40 years. There are no guarantees, but our knowledge will grow even if we fail to find the targeted plant. Our long range goal is to eventually create some kind of publication about Oregon's rare plants. This year's field trips can be an important part of that work.

Secondly, some of our field trips will be especially designed to encourage beginning botanists and other interested people to join us. It is important that we all do our part to help these guests feel welcome and to ensure they get all the ecological and botanical information they want. Your help is appreciated. Roger Yerke is leading the first of these trips into Oneonta Gorge on 16 May. And lastly a bookkeeping matter -- In response to rising fuel costs, we have adjusted the rate of driver compensation to 4¢ per mile per person.

Sat. 11 April -- Three Lynx Area, Clakamas River Drive. George Jeffcott, leader. Meet 9:30 am, at Tri-Met's Handyman Park and Ride lot at 15550 SE McLoughlin Blvd. and Risley Ave. in Oak Grove.

Sat. 18 April -- Shaniko Flats, George Lewis, leader. Carpool at State Motor Vehicles Department parking lot (NE 60th and Glisan) at 6:30 am or meet at the junction of Highways 97 and 197 at 9:00 am. George plans a 3-4 mile hike to find Claytonia umbellata, Collomia macrocalyx, and Talinum spinescens (all rare).

Sat. 25 April -- Willamette Valley Praireland/Castilleja levisecta. Bob Mienke, leader. Carpool at Tri-Met's Barbur Blvd. Transit Station (9750 SW Barbur Blvd.) at 7:00 am or proceed to Finley National Wildlife Refuge, south of Corvallis on Highway 99W. Meet at grassy parking area near Park Service restroom approximately 3/4 mile after entry. Bob, who is investigating rare plants of the Willamette Valley for the US Fish and Wildlife Service will continue his search for the Castilleja, but will also show us Lomatium bradshawii, Sidalcea campestris, Sidalcea nelsoniana and Mimulus tricolor (all rare). Bob recommends waterproof boots, as parts of the refuge are likely to be wet.

Sat. 2 May -- Flower Show-No field trip.

Sat. 9 May -- NPSO Annual Meeting/Mosler Area. Keith Chamberlain, leader. Meet at the Mosier Grange at 9:00 am. Keith will take us up past Wasco Lookout to see rare plants (including Astragalus hoodianus and Lomatium suksdorfii) in that area.

Sun. 10 May -- NPSO Annual Meeting/North Bank Columbia. Keith Chamberlain, leader. The details of this trip have not been determined. Keith will adjust the trip as the season dictates. The meeting place is in The Dalles (and will be announced at the annual meeting). Keith hopes to go to Glenwood, Washington and Convoy Lake.

Sat. 16 May -- A Beginner's Guide to the Ferns of Oneonta Gorge. Roger Yerke, leader. Meet at State Motor Vehicles Department parking lot (address above) at 9:00 am. Roger, who is working on a book about ferns will lead this short hike (about 3 miles) and if time allows will contrast the south bank environment with the north bank by crossing the river and continuing on at an undetermined location. This trip will be a good introduction to the Columbia Gorge, its plants and the Native Plant Society.

FIELD TRIP REPORTS

PORTLAND CHAPTER

A light rain was falling, at McClay Park, March 7, 1981, but a number of joggers and hikers were observed on the trail below the parking lot. Finally 9 of us, led by Ruth M. Hansen, started down the Wildwood Trail and since identification of native plants we was new to the majority of our small group, many stops were made to inspect early spring growth of trees, shrubs, herbaceous plants and some mosses. Few plants were in flower: however Osmaronia cerasiformis (Oemlaria), Rubus spectabilis, Berberis nervosa, Ribes sanguineum, Petasites frigidus and Trillium ovatum were observed along this trail.

Before crossing roadway a large shrub of Salix scouleriana was practically out of bloom, but a seedling Prunus was spectacular with myriads of white flowers. Across Cornell Rd. we proceeded along upper wildwood trail and keeping to the right finally came down again to the roadway and parking lot, thus making a loop. This upper trail presents a somewhat drier habitat and under the tall firs Viola glabella and a number of Trillium ovatum were in bloom. Altogether, this was an interesting and most rewarding hike.

PHOTOGRAPHERS: TAKE NOTE

Have you ever noticed the excellent photographs on the cover of your white pages telephone directory? Pacific Northwest Bell has a yearly contest for the cover photo. Application blanks and ground rules are to be issued by the company in April.

NPSO has some outstanding photographic talent among its membership, and this is an excellent opportunity to toot our horn. It is also a priceless opportunity for us to educate each person who uses the telephone directory about our endangered flora. So now is the time to start looking through your photographs or to get out in the field to take some high quality photographs of our endangered flora (or non-endangered, if you be so inclined). Please contact the telephone company or me for details.

Annie Kowalishen

The brown algae (phylum *Phaeophyta*) common to our shores include the kelps. The name "kelp" is Middle English in origin and means "ash", referring to the ancient European practice of burning brown algae for its potash, to be used for fertilizer, in soap-making and other industrial processes.

The giant Pacific Kelp (*Macrocystis integrifolia*), which forms extensive forests in exposed intertidal and subtidal waters 7 to 10 meters deep from Alaska to California. Its branches rise hundreds of meters on blade bearing floats from a rhizome-like base. This single species alone accounts for the extensive reddish-brown kelp beds lying off the coasts. *Macrocystis* is harvested commercially on a large scale for use in the food and drug industry and in agriculture. Cut several times a year to about 1 meter below the surface of the ocean, the great biomass of the fast growing *Macrocystis* is a truly renewable resource. Very tough, its principle use as a direct food source has been as a condiment, as a sweet-sour pickle relish made from sections of stem and bladder, or as a jelly-like confection.

Laminaria species (*L. setchelli*, *L. saccharina*, and *L. greenlandica*), found growing on rocks, wood, and shells in sheltered waters between high and low tide lines are also kelps. Particularly rich in iodine and iron, they too are important items of commerce, both to the drug and food-processing industries and as food. *Laminariae* are the beloved Kombu of Oriental cuisine and are sundried, smoke-dried, ground, bundled, or slivered for the produce market. Kombu is widely used in Japan as flavoring for soups, stews, and other dishes or rinsed, boiled and eaten as a vegetable. It is pickled and candied; it is also served as a tea-like beverage. Some Kombu species contain natural taste-enhancing sodium glutamate.

Desmarestia species, also brown algae, are the only algae on our shores which are considered poisonous. The cells of all *Desmarestia* species contain esters of sulphuric acid, which is released when the plant is bruised or subjected to heat, bleaching and dissolving any algae which it contacts. *Desmarestiae* along our coast (*D. ligulata*, *D. viridis*) mature in early summer, then lose their foliage, but stalks persist through the winter. In the spring, new blades develop from the margin or midrib of old blades. As might be expected, it has a sour taste, but ingestion is not recommended.

The red algae (phylum *Rhodophyta*) are the most varied in color of the marine plants, occurring in pinkish-red, purplish-red to brownish-red and olive species. Some are so dark as to appear nearly black when dried. Generally smaller than the brown algae, there are more species of red marine algae in the oceans than any other phylum, with more than 265 species in Pacific Northwest waters. They also have the broadest range of habitat of all the algae and are the most varied in form. Some are found as calcareous or coralline coatings on surfaces in rocky intertidal areas. Others are branched, feathery, warty, or sheetlike in habit of growth. They become progressively more abundant below the tide lines and are the dominant floral species of deeper waters. This is due to their red pigment which is able to use the blue-violet end of the visible spectrum to carry on the

plant's photosynthesis. Most *Rhodophytae* are regularly utilized for food, as storms rip these relatively delicate species loose from their holdfasts and carry them in to shore where they can be easily gathered.

Porphyria perforata (purple laver or nori) is common along both Western and Eastern Pacific shores. Its deeply lobed single-celled sheets grow on rocks from a tiny discoid holdfast. It often appears steel gray, dull purplish or oily in appearance when seen in intertidal pools. When exposed to the air between tides, it darkens and becomes stiff, rubbery, or brittle in texture. Easily gathered and fast-growing, it is harvested worldwide for the table. Especially in the Orient, it is a favorite delicacy, used in soups, stews, and in many rice dishes.

Palmaria palmata forma mollis (sea lettuce or dulse), a bright red or brownish-red seaweed is fairly common on rocky shores along both the Atlantic and Pacific coasts. Collected during the summer and sun-dried, it is a traditional food item for North Atlantic shoredwellers. It is commonly served with dried fish, butter and potatoes. Of leathery texture, it is also used as a substitute for chewing tobacco and for cattle food.

It is interesting to note that botanical field guides to our region generally omit our native marine plants, as do most survival handbooks. We look to the sea as a source of protein, for its fish and shellfish, and for raw materials, such as alginates, mucilage, potash, iodine, and salt, but we seldom view it as a vegetable source. The next time season or weather thwarts your yen for botanizing native plants, head west to the running-ocean tides, to the wet sands and the dark rocks. There are adventures in leaning and in good eating to be found in the fresh seaweed mats tossed up by the waves and growing on the rocks or in tidepools. High in vitamins, minerals, starches, and simple sugars, untouched by poison sprays or human hands, and unregulated by governments, the larger algae we call seaweed have excellent nutritional value, unique gastronomic appeal, and the price is right! Bon appetit!

For further information, the following inexpensive paperbacks are recommended: Kozloff, Eugene N. *Seashore Life of Puget Sound, the Strait of Georgia, and the San Juan Archipelago*. Seattle, WA; University of Washington Press, 1974.

Madlener, Judith Cooper. *The Seavegetable Book: Foraging and Cooking Seaweed*. New York: Clarkson N. Potter, Inc., 1977.

Waaland, J. Robert. *Common Seaweeds of the Pacific Coast*. Seattle, WA: Pacific Search Press, 1977.



PLANT FAMILY PROFILES

By Herm Fitz

The Nymphaeaceae - WATER LILY FAMILY

The Nymphaeaceae is a small family of only 90 species in 9 genera; however, its representatives are spread everywhere throughout the world's ponds, streams and lakes. Many species are showy, and cultivated as aquatic ornamentals: the sacred Lotus (*Nelumbo*), the spectacular Queen Victoria Water Lily (*Victoria amazonica*), white water lilies (*Nymphaea*) and Yellow Pond Lilies (*Nuphar*). Two native species occur in Oregon, the Water Shield or Water Target (*Brasenia schreberi*) and the Western Yellow Pond Lily (*Nuphar polysepalum*).

Members of this family are aquatic perennial herbs with submerged, floating or sometimes emergent and often large leaves, frequently cordate (*Nuphar*) or peltate (*Brasenia*) and with entire margins. The flowers are solitary, emergent on long pedicels, quite showy in the Yellow Pond Lily, but small and purplish-red in the Water Shield. Sepals (green or colored) and petals are generally indefinite in number (3 each in *Brasenia*) and poorly differentiated, spirally arranged and gradually intergrading from one to another - characteristics that are considered primitive. The stamens are also indefinite in number, also spirally arranged and poorly differentiated from the petals, which may be inconspicuous. The pistil may be single and of several carpels (*Nuphar*), or flowers may have an indefinite number of separate, single carpellary pistils (*Brasenia*). These flowers are pollinated by beetles.

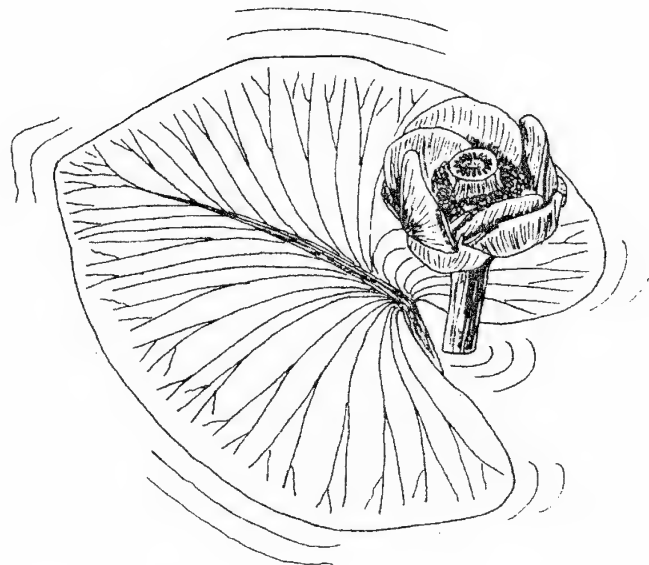
In fall as the pistils ripen, seed pods of the Western Yellow Pond Lily become large and greenish, each containing hundreds of small brown seeds in a pulpy white membrane. These nutty-flavored seeds were important as food for the Klamath Indians of southern Oregon as potatoes, rice, or wheat are to other cultures. After due ceremony, the Indians would gather hundreds of pods from the lilies, separate the seeds (called *spokwas*) and dry them for winter use -- either to be ground into a meal (*wokas*) or roasted like popcorn (*lolensh*). A few patient persons, mostly of Indian descent, still go to the marshes and ponds in fall to harvest the lily seed. In other parts of the world, edible rhizomes and seeds of the white water lilies (*Nymphaea*) are harvested for food.

The family floral formula in this case reflects the primitive indefinite nature of the numbers of parts:

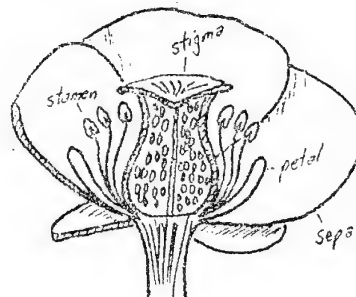
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(where oo means some indefinite number)

This family is hard to miss! You may encounter an aquatic herb in some pond, ditch, lake or sluggish stream somewhere, and notice the long-petioled, floating peltate or cordate leaves. The flowers will be single, and have an indefinite number of spirally arranged, intergrading floral parts - and you will know you have found a member of the Nymphaeaceae - the Water Lily Family.



Leaf and flower of the Western Yellow Pond Lily (*Nuphar polysepalum*). Notice the large floating cordate leaf and showy solitary emergent flower with spirally arranged parts.



Longitudinal section through blossom of *Nuphar*. Note the large (yellow) sepals, inconspicuous petals and numerous stamens, all intergrading, and the multi-locular ovary which matures many brown seeds.





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Department of Biology
Southern Oregon State College
Ashland, Oregon 97520

NATIVE PLANT SOCIETY OF OREGON

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Vice President: Dr. Herb Armentrout, 20060 SE Hiway 224, Clackamas 97015 Phone 658-2751
Secretary: Mary Jane Fredricks, 4436 NW Barnes Road, Portland 97210 Phone 228-4891
Treasurer: Russ Graham, 4030 Eagle Crest Road N.W., Salem, Oregon 97304
Board of Directors: Dave Garcia, George Lewis, Dave Wagner, Ruth Hasen, Herm Fitz, Karl Urban
NPSO Bulletin Editors: Vern Crawford and Dr. Frank Lang

CHAPTER PRESIDENTS

Blue Mountain: Harry Oswald, Box 459, Pendleton, 97801 Phone 276-1241
Emerald: Dr. Dave Wagner, 3315 Onyx St. Eugene, 97405 Phone 683-2609
High Desert: Joyce Bork, 60817 Alta, Bend 97701 Phone 389-5657
Mid-Columbia: Keith Chamberlain, Box 151, Mosier, 97040 Phone 478-3314
Portland: Ann Whitmyer, 6566 SW Terri Ct. #16, Portland, 97225 Phone 244-9264
Siskiyou: Joan Seevers, 725 Leonard, Ashland, 97520 Phone 482-5492
Willamette Valley: Tony Sobolik, 2120 Pioneer Road, Dallas, 97338 Phone 623-2630

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The Bulletin of the NATIVE PLANT SOCIETY OF OREGON

Vol. XIV No. 5

May 1981

NPSO ANNUAL MEETING

The annual meeting will be at the Mosier Grange in Mosier, Oregon, at 6:30 p.m. on May 9, 1981. Carl Urban will be our speaker for the evening. He is an instructor at Blue Mountain Community College, and he will show slides and discuss some of the rarer plants of the Steens, Blue, and Wallowa Mountains.

Saturday's field trip will leave from the Grange Hall at 10:00 a.m. It will be in the Mosier area. *Astragalus hoodianus* and *Lomatium suksdorfii* will be some of the rarer plants to be seen.

Sunday's Directors' meeting will be in The Dalles. The location will be announced Saturday night. A shorter field trip to the Washington side of the river will follow this meeting. The exact route of this trip will depend upon how the season advances; details will be announced at the banquet.

Reservations were to be made by May 1.

Keith Chamberlain
P.O. Box 217
Mosier, Oregon 97040

NPSO ELECTION RESULTS

The NPSO election committee (Lang, Crawford and Southworth) has determined that the voting membership has elected:

David Wagner	President
Annie Kowalishen	Vice President
Paula Vincent	Secretary
John Christy	Treasurer
Veva Stansell	Board of Directors
Cynthia Roberts	Board of Directors
Stuart Garrett	Board of Directors

These fine people will take over their official duties at the Board of Directors meeting Sunday, May 10th following their installation at the Annual Meeting at Mosier, Oregon, May 9th. The organization is very fortunate to have such excellent members willing to hold office. The future of the organization appears to be very bright.

CHAPTER CALENDARS

EMERALD CHAPTER

Meetings:

Monday, May 4, 7:15 p.m., Eugene City Library. Dr. Franklin "Herm" Fitz, biology instructor, McKenzie River High School, Emerald Chapter member, and author of NPSO Bulletin, "Plant Family Profiles," will share some of his experiences and frustrations of putting together his research and discuss the mechanics of preparing herbarium specimens.

Monday, June 1, 7:15 p.m., Eugene City Library. Freeman Rowe, botany instructor at Lane Community College, will present a program on the "Natural History of Baja California." We will see slides and hear a discussion of the plants, animals and habitats of this area. Freeman has just returned following a three month visit to Baja California, where he has been a frequent visitor in early Spring.

Special Event:

The Emerald Chapter, NPSO, sponsored a table and display at the Oregon Wilderness Coalition fair at the Lane County Fairgrounds, May 2 and 3. The Coalition brings together interests dedicated to the protection of Oregon wild lands and waters.

Wildflower Walks:

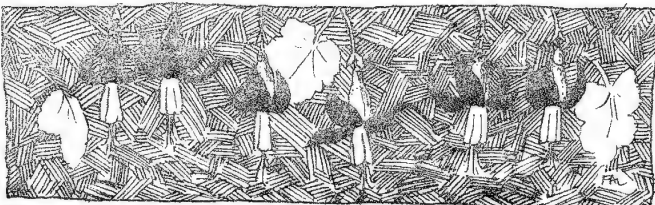
Dr. Dave Wagner, Director of the U of O Herbarium and NPSO President elect, leads a weekly wildflower walk through Alton Baker Park beginning March 5 through June 11. Meet at the north end of the footbridge over the Willamette River near Autzen Stadium at 12:30 every Thursday -- rain or shine. Call 686-3033 for further information.

Linda Johnson will lead a weekly wildflower walk from Hendrick's Bridge Wayside, April 1 - June 3, (Wednesdays) from 5:30-6:30 p.m. While compiling a list of plants seen, we will identify many kinds of flowering plants, emphasizing those newly in bloom. Rain or shine. Call 747-4048 for more information.

HIGH DESERT CHAPTER

Field Trip:

Saturday, May 2 -- An update of the Metolius River Preserve Plant list will be the object of this outing. Bring a sack lunch and meet at McDonalds lot at 9:00. Leader is Joyce Bork (389-5657).



WILLAMETTE VALLEY CHAPTER

Field Trips: (Contact Trip Leader for details)

Saturday, May 2 -- Rickreal Ridge/Morris Johnson. Trip Leader -- Clint Urey, (743-2802).

Saturday, May 9 -- 4-H Center/Audubon Nature Trail. Trip Leader -- Gus Rockafellar (581-5866).

Saturday-Monday, May 9, 10, 11 -- Silver Falls State Park Native Plant Show. On your own.

Saturday, May 16 -- Sheridan Area Boy Scout Camp. Trip Leader -- Jake Hurlbert (364-9774).

Saturday-Monday, May 23-25 -- Kalmiopsis Wilderness Weekend -- Trip Leaders -- Wilber Bluhm (393-2934).

Saturday, May 30 -- Silver Falls State Park. Trip Leaders -- Blanche Sweger (873-4693).

Saturday, June 6 -- Little North Fork. Trip Leader -- George Schoppert (859-2613).

Saturday, June 13 -- Bruno Meadows. Trip Leader -- Jack Bailey (394-2414).

Next Meeting:

Third Monday in September, details announced in August Bulletin.

PORTLAND CHAPTER

Meetings:

Monday, May 11, 7:00 p.m., Central Library, 801 SW 10th, Portland. Flowers of the Three Sisters. The program will be presented by Nancy Russell a member of the Portland Chapter of the NPSO. She is now Co-Chairman of the Friends of the Columbia Gorge and Conservation Chairman of the Portland Garden Club.

Field Trips:

Saturday, May 16 -- A Beginner's Guide to the Ferns of Oneonta Gorge. Roger Yerke, Leader. Meet at the State Motor Vehicles Department parking lot at 9:00 a.m. Roger, who is working on a book about ferns will lead this short hike (about 3 miles) and if time allows will contrast the south bank environment with the north bank by crossing the river and continuing on at an undetermined location. This trip will be a good introduction to the Columbia Gorge, its plants and the Native Plant Society.

Saturday, Sunday, Monday, May 23, 24, 25 -- Cave Junction Area. George Lewis, Leader. Meet at Cave Junction Motel (or Inn or whatever, you can't miss it) at the junction of US 199 and State 46 at 1:00 p.m. on Saturday and 9:00 a.m. on Sunday. George has not worked out the exact details, but this area is unusually rich floristically and there is no end of possibilities. Lodging is available in Cave Junction. Campgrounds are also nearby.

Saturday, May 30 -- A Beginner's Trip to Ridgefield National Wildlife Refuge. Annie Kowalishin, Leader. Meet at the parking lot for the northern portion of the refuge at 9:00 a.m. Annie will define botanical terms and explain the use of keys in identifying plants. Also, she hopes to find Howellia aquatilis, a rare aquatic plant. This is an easy flat trail hike. Be sure to bring your binoculars. The birding is good.

Saturday, June 6 -- Blue Lake Ridge. George Lewis, Leader. Meet at OMSI parking lot at 8:00 a.m. for carpooling or 9:00 a.m. at the Wilson River Summit on Highway 6. This must be one of George's favorite spots. He has a long list of things to see (including wolves). Some of the plants he hopes to find include: Lewisia columbiana, Cladanthamnus pyroliflorus, Synthryris schizantha and Chamaecyparis nootkatensis (Alaska Yellow Cedar) all of which are locally rare and at least two of which are on the Federal "watch" list.

Saturday, June 13 -- To Be Announced.

SISIKIYOU CHAPTER

Rules for Field Trips:

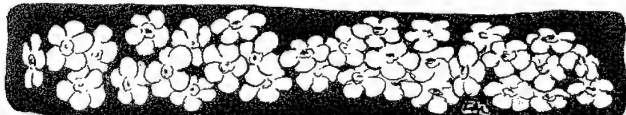
1. Please leave your pets at home.
2. Please don't pick flowers or plants, especially in sensitive areas.
3. Car owners will be paid 4¢/mile by each passenger for field trips, unless owners and passengers make other arrangements.
4. All participants will attempt to use scientific and common names whenever possible.

Field Trips:

Saturday and Sunday, May 2 and 3. On Saturday, California Nickel Corporation will conduct a tour of the Gasquet Mine Project for ten members of our chapter and ten members of the California North Coast Chapter. For those who wish to, we may stay overnight either at the Cave Junction Inn, or at a campground on the Wimer Road. On Sunday, Jaque Greenleaf will lead a trip to Eight Dollar Mountain, visiting serpentine areas and Darlingtonia bogs, in conjunction with the Illinois Valley Garden Club. If you wish to attend the Sunday trip only, we will meet in Selma at 10 a.m. Departures on Saturday will be at Bi-Mart, Ashland, 8 a.m. and K-Mart, Medford, 8:30 a.m.

Saturday, May 16. An easy half-day trip to Hollenbeck Hill Research Area on Dead Indian Road, to see the Cascades spring flora. Bring water and snacks. Leader, Cynthia Roberts. Departure from K-Mart, Medford, 9:00 a.m. and Bi-Mart, Ashland, 9:30 a.m.

Saturday, Sunday, and Monday, May 23-25. Moderate three day backpacking trip along the Illinois River trail, which may be partially removed soon due to the construction of a Forest Service Road. Both nights spent six miles in at Pine Flats. Trip coordinator: Jennifer Riefler. Anyone wishing to leave Friday to occupy camping spaces at Pine Flat, contact Jennifer, 482-1500. Normal departures from Bi-Mart, Ashland, 7:00 and K-Mart, Medford, 7:30 a.m.



NEW COLUMBIA GORGE FLORAL SURVEY

The 1981 edition of a Survey of Wildflowers and Flowering Shrubs of the Columbia Gorge has been published by the Portland Chapter of the Native Plant Society of Oregon. Compiled by Russ Jolley and Lois Kemp, aided by observations by many others, this booklet is an update of two previous surveys and includes the names of over 800 species (all scientific Latin names). It covers the wildflowers and flowering shrubs (not trees, sedges, grasses or mosses) located along the Columbia River from the Sandy River east to The Dalles bridge, a distance of about 68 miles.

Since publication, Jolley has already discovered three more species, some slightly east of the present boundaries and plans an eventual extension of the survey into the easternmost part of the Gorge to Maryhill Museum.

For a copy, send \$1.00 to Shep Wilson, 2925 S.W. Fairview, Portland, OR 97201 or to Rhoda Lewis, 3723 S.E. Roethe Road, Milwaukie, OR 97222. Proceeds from book sales will go into the club treasury to promote further interest and protection of our native plants.

Abstracts available. Additional copies of abstracts presented at the Symposium Threatened and Endangered Plants: A West Coast Perspective, held at Southern Oregon State College, July 25-27, 1980, are available from the Biology Dept., Southern Oregon State College, Ashland, OR 97520. Cost: \$1.00. Make checks payable to the Native Plant Society of Oregon.

WELCOME TO NEW MEMBERS

Siskiyou Chapter

Dorothy King Young, Ashland
Roger and Marylou Schnoes, Ashland

Emerald Chapter

David L. Predeek, Eugene
Bill Burton, Springfield

Blue Mountain Chapter

Joan Soderstrom, Hermiston
Roy and Rachel Sines, LaGrande
Norma Van Grunsven, Unity

Willamette Valley Chapter

Martha Blau, Salem
Judith M. Armstrong, Salem
Alice Andres, Albany
Sarah W. McDuffie, Salem

Mid-Columbia Chapter

Virginia Winegar, Tygh Valley

Portland Chapter

Walter L. Scheribel, Portland
Kathleen M. Serrell, Portland
Therese Falkner, Portland
Alice M. Purcell, Portland
Gary L. Blackburn, Portland
Elizabeth Grajek, Portland
Maryilyn Clark, Vancouver, WA
Esther H. Hurlbutt, Beaverton

ALLERGIC CONTACT DERMATITIS

There is a great deal of current interest in the flora, fauna, and other natural history interests, and just the beautiful amenities of having a place to walk in our sanctuary, The Miller Place, Oaks Bottom, and St. Mary's in the Portland area.

The medical profession has also developed a keen interest, but for a slightly different reason: Allergic Contact Dermatitis. The recognized world authority on dermatitis caused by sensitivity to plants, is Dr. John Mitchell, Botanical Dermatologist of Vancouver, British Columbia. His book, Plants and Plant Products Injurious to the Skin, was published in 1979.

Locally, Dr. Francis Storrs M.D., of the Dermatology Division, University of Oregon Health Science Center, has been involved in this unique medical problem, especially in the forestry related industries. Fallers, choke setters, pruners, truck drivers, resin harvesters, cabinet makers, and even workers making wooden matches may suffer severe dermatitis disability. The odd note to all of this is that even people who do not work in the woods can become sensitized and suffer the same disability from dermatitis--as long as 15 years after the initial exposure!

The culprits are now known. The main problem is a chemical called "Sesquiterpene lactones." There are about 250 of these compounds known from the Compositae family and from the genus Frullania, the Liverworts, of which there are 5 species here in the Pacific Northwest.

I think the chemical discussion of the sesquiterpene lactones is beyond the province of this brief report, but most of the compositae plants that can cause dermatitis are common in our area, and in our gardens. For example: all of our species of Arnica, Arctium (burdock), Chicorium (chicory), Chrysanthemum (ox-eye daisy), Cosmos, Lactuca (lettuce), Calendula (marigold), Artemisia (garden tansy), and Achillea (yarrow).

What really seems interesting to me is that our 5 species of Frullania liverwort (of which 2 are found here in the Willamette Valley and 3 in the Cascade Mountains) contain the same chemicals as the Compositae! The members of the Compositae and these liverworts (which are found on alder and rock of our sanctuary trails) are as phylogenetically distantly related as a sponge would be to an insect. To the biologist this points out the remarkable similarity of all living organisms at the biochemical level.

So, hikers, hunters, fishermen, plant buffs, and birdwatchers share a common malady with the forest harvest industry: a dermatitis sensitivity traced to an obscure liverwort, Frullania franciscana, found on rocks and trees in many parts of the Pacific Northwest.

What is your defense? No more than whatever natural genetic endowment you might have to something like poison oak. What was it I heard someone say a few years ago at the height of pollution, food additive, and other environmental concerns... "Life is dangerous to your health..."

Glenn E. Walthall,
NPSO Naturalist, Portland

NPSO T&E PLANT COMMITTEE IS BUSY

Last summer Vern Crawford asked me to write up an article on what the NPSO T & E Plant Committee has been doing. It is a sign of how busy the committee work has gotten that I have delayed this long to finally get this article written.

In the two years since the committee has been in existence, the amount of business we have conducted has increased enormously.

Some of the specific tasks we have accomplished have been to compile a list of environmentally concerned organizations, a thick collection of information on T&E Plants, master lists and plants lists of many NPSO field trips, a fledgling slide collection, support to Ann Whitmyer in her efforts to introduce legislation, getting on the mailing lists for input to environmental impact statements of many agencies, supporting getting Darlingtonia californica on a prohibition list of international trade (and getting K-Mart's and Fred Meyer's support in stopping the selling of it), and lots and lots of correspondence in support of preserving our T&E flora. We are also in the process of finishing mapping most of the locales of these plants. We hope these maps will soon be available to our chapters.

Portland chapter has had a brief presentation on one T&E plant each month. We have almost used up the 500 sets of notecards, which turned out to be a moneyraiser for each chapter and the T&E committee.

NPSO has become a staunch and functioning advocate for our native flora within the past two years.

Annie Kowalishen

NEW CHAPTER OFFICERS FOR 1981

Portland Chapter

President	Shep Wilson 2925 SW Fairview Blvd. Portland, OR 97201
Vice President and Program Chairman	Don Barr 12438 SW Orchard Hill Road Lake Oswego, OR 97034 246-2785
Vice President and Field Trip Chairman	Dale Wagner 3335 NE 20th Avenue Portland, OR 97212 284-1309
Secretary	Virginia Diegel 16415 NW Brugger Road Portland, OR 97229 645-1344
Treasurer	Ann Lunn 3040 NW Parkview Lane Portland, OR 97229 645-7326

Willamette Valley Chapter

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Vice President (Programs)	Jack R. Bailey 39394 Brock Drive Scio, OR 97374

Secretary -
Treasurer

Viola Sobolik
2120 Pioneer Road
Dallas, OR 97338

1981 Field Trip
Chairman (appointed)

Clint F. Urey
6945 Glendora Way SE
Turner, OR 97392

Emerald Chapter

President

Charlene Simpson
2455 Alder Street
Eugene, OR 97405
686-1094

Vice President

Linda Johnson
88278 Millican
Springfield, OR 97477
747-4048

Secretary

Laramie Palmer
259 W. 23rd Avenue
Eugene, OR 97405
343-6536

Treasurer

John Christy
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Eugene, OR 97402

Siskiyou Chapter

President

Vern Crawford
923 Harmony Lane
Ashland, OR 97520
482-9196

1st Vice President
(Programs)

Darlene Southworth
496 Beach Street
Ashland, OR 97520
488-1034

2nd Vice President
(Field Trips)

Jennifer Riefler
600 Conifer Way
Ashland, OR 97520
482-1500

Secretary -
Treasurer

Lisa Hirsch
262 Grant Street
Ashland, OR 97520
488-0133

DIAMOND CRATERS

by Esther Helen Gruber

Diamond Craters is a 6-mile diameter shield volcano located 60 miles south of Burns, Oregon. Its vegetation consists of several distinct native plant communities in a diversity of soils. Altogether, the craters area contains 16,656 acres of public land near the center of Harney County, at the ecotone between the Desert Shrub, the Shrub-Steppe, and the Western Juniper Zones. I will briefly describe each zone.

Greasewood (Sarcobatus vermiculatus) is the most common shrub on the lower portions of the Desert Shrub Zone. In the more saline areas greasewood is less common and saltgrass (Distichlis stricta), marsh arrowgrass (Triglochin palustre) and borax weed (Nitrophilia occidentalis) are more common. At higher elevations in the Desert Shrub Zone on well drained rocky hillsides, budsage (Artemisia spinescens), spiny hopsage (Atriplex spinosa), spiny horse-brush (Tetradymia spinosa), and shadscale (Atriplex confertifolia) occur.

Most of the vegetation at Diamond Craters is typical of the Shrub-Steppe Zone. This zone is dominated by big sagebrush (Artemisia tridentata). Other shrubs characteristic of the area are grey rabbitbrush (Chrysothamnus nauseosus), green rabbitbrush (C. viscidiflorus), grey horsebrush (Tetradymia canescens), little-leaf horsebrush (T. glabrata) and prickly phlox (Leptodactylon puegens). The young cinder-based soils support relatively undisturbed native bunchgrass communities including needle-and-thread grass (Stipa commata), thurber's needle-and-thread grass (S. thurberiana), bluebunch wheatgrass (Agropyron spicatum) and squirreltail (Sitanion hystrix). In the spring one can find a colorful array of blooming annuals. Threadleaf phacelia (Phacelia linearis), Anderson's larkspur (Delphinium andersonii), short-stemmed lupine (Lupinus brevicaulis), matted cryptantha (Cryptantha circumcissa), white eatonella (Eatonella nivea), Pursh's milkvetch (Astragalus purshii), small flowered blue-eyed Mary (Collinsia parviflora), desert paintbrush (Castilleja chromosa) and sandlily (Leucocrinum montanum) are among the species that color the craters' floors. In the wet spring of 1980, the dark, cindery soils became a patchwork of gold and purple due to large blooming populations of golden poppy (Canbya aurea), dwarf monkey-flower (Mimulus nanus), and Cusick's mimulus (M. cusickii).

Western juniper (Juniperus occidentalis) and big sagebrush (Artemisia tridentata) are the dominants in the Western Juniper Zone and exist on the low peripheral flows in the northern portion and on the high northern slopes. Some of the junipers are more than 200 years old. In this more moist environment flourish the chocolate lily (Fritillaria atropurpurea), yellow bells (F. pudica), scapose silene (Silene scaposa var. lobata), dwarf onion (Allium parvum), and brittle-fern (Cystopteris fragilis).

The Wetland areas along the south and west edge of the lava flows reflects a diversity of communities: an intergradation between playas and fresh water marshes. In the summer of 1979 I found a grove of aspens (Populus tremuloides) at the southern edge of the flow, an unusually low elevation for aspens in the central Harney Basin. The older aspens are 50 to 60 years old, while the younger ones are 16 to 20 years old. In this area star-flowered solomon-plume (Smilacina stellata), Wood's rose (Rosa woodsia), and common chokecherry (Prunus virginiana) can be found. Poison ivy (Rhus radicans) was found in the shallow fissures of the low basaltic ridges surrounding the freshwater ponds on the southwest edge of the lava flow.

In surveying spring plants in 1980, a few species of special interest were found at Diamond Craters: inch-high lupine (Lupinus uncialis) and rigid nemacladus (Nemacladus rigidus). Lupinus uncialis has only 7 known sites in the Burns District. Five of these 7 sites are in barren areas of tephra soil at Diamond Craters. This small, state-listed annual has been rarely collected in Oregon and warrants further inventory to determine its status in the future. Nemacladus is a very small, inconspicuous plant that is difficult to discern in the field because of its purplish-tinged coloration that blends in with the substrate. It has 14 known sites in the Burns District, yet is probably more common than originally suspected.



Lupinus uncialis lat.

Diamond Craters is becoming an island of native vegetation surrounded by vast acres of wheatgrass seedings. Recently, the thin slabs of pahoehoe lava have attracted the attention of rock thieves who sell the lava as decorative facing stone. The area in which the trespassers entered with their heavy equipment shattered the pahoehoe to powder and left permanent scars. In order to preserve the area, in the spring of 1979 I compiled the first report for identifying Diamond Craters as an Area of Critical Environmental Concern (A.C.E.C.). This federal designation allows the BLM to provide special management for areas of concern. As of this date, Diamond Craters has been approved as an Area for Environmental Concern, with a management plan element already prepared for the area.

In addition to the ACEC, my co-workers and I compiled a report for possible designation of the entire area as a Research Natural Area. Since our presentation to the Pacific Northwest Natural Area Committee at its November 16, 1979 meeting, consideration is presently being given for designation of the area as "Diamond Craters Outstanding Natural Area." This designation will allow both recreation and research to continue in the area. It is a vital designation for the future preservation of the area.

Diamond Craters affords the opportunity to preserve an area consisting of relatively undisturbed natural vegetation among geologic features of exceptional educational and scientific value. If you are interested in the future of the area or would like to visit Diamond Craters, contact:

Burns District
Bureau of Land Management
74 S. Alvord Street
Burns, Oregon 97720
Telephone: 573-2071

SISKIYOU CHAPTER

Meetings:

Thursday, May 7, 7:30 p.m., Room 171, Science Building, Southern Oregon State College, Ashland. Edible Wild Plants, Cindy Cripps. U.S. Forest Service, speaker.



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The Bulletin of the NATIVE PLANT SOCIETY OF OREGON

Vol. XIV No. 6

June 1981

THE ANNUAL MEETING IN MOSIER

The 1981 annual meeting of our Society we held in Mosier, located in the awesome Columbia River Gorge, May 9-10. Following a nice day of botanizing in the field, approximately 50 people attended the banquet, which was served by the Mosier Grange. Filling in for ailing President Frank Lang was Vice President Herb Armentrout, who called upon each state chairperson and each chapter president to report on their year's activities. New state officers and directors were sworn in, and then the program, beautiful slides of wildflowers from the Wallowa, Blue, and Steens Mountains, was ably delivered by Karl Urban, botanist at Blue Mountain Community College, Pendleton.

A special "Thanks" to Keith Chamberlain and the Mid-Columbia Chapter for all their effort to make the annual meeting the success it was. I, for one, will want to return to the Mid-Columbia country for more botanizing with our members in that area.

Vern Crawford

CHAPTER CALENDARS

WILLAMETTE VALLEY CHAPTER

Field Trips

Carpool at South Salem K-Mart, north side of parking lot, 8:00 a.m. except as noted.

Sat., June 6 -- Little North Fork, George Schoppert, leader (859-2613)

Sat., June 13 -- Bruno Meadows, Jack Bailey, leader (394-2414)

Sat., June 20 -- South Peak, Heike Eubanks, leader (581-9569)

Sat., June 27 -- Saddle Mountain, with Salem Audubon. Bob Buchanan, leader (926-1896)

Sat., July 11 -- Iron Mountain, with Salem Audubon. Irma Bunnell, leader (393-6159)
Carpool at K-Mart at 7:30 a.m.

Sat., July 18 -- Cascades. Wilbur Bluhm, leader (393-2934), **Carpool at K-Mart at 7:30 a.m.**

PORTLAND CHAPTER

Meeting: Monday, June 8, 7:00 p.m., Central Library, 801 S.W. 10th, Portland, Succulent Plant Families. The program will deal with the families, describes their makeup and the different genetic relationships. The program will be given by Betty Ferguson, a NPSO member, photography and lecturer.

Field Trips

Sat., June 6 -- Blue Lake Ridge. George Lewis, leader. Meet at OMSI parking lot at 8:00 a.m. for carpooling or 9:00 a.m. at the Wilson River Summit on Highway 6. This must be one of George's favorite spots. He has a long list of things to see (including wolves). Some of the plants he hopes to find include: Lewisia columbiana, Cladostomum pyroliflorus, Synthyris schizantha and Chamaecyparis nootkatensis (Alaska Yellow Cedar) all of which are locally rare and at least two of which are on the Federal "watch" list.

Sat., June 13 -- Buck Creek. Elizabeth Handler, leader. Meet at State Motor Vehicles Department parking lot, NE 60th and Glisan at 8:00 a.m. Buck Creek is near Mt. Adams in the Klickitat River Drainage. The 3-4 mile hike is easy, very scenic and is likely to be flower laden.

Sat., June 20 -- No trip scheduled.

Sat., June 27 -- Cascade Head. Kathryn McDonald/John Richter, leaders. Both Kathryn and John are botanists for the Nature Conservancy which owns and manages Cascade Head. One of the recurring problems at the Head is off-trail trampling of endangered plants such as Sidalcea hirtipes and Silene douglasii praria.

T.N.C. has closed these areas. This should provide us with a first hand grasp of sensitive area land management problems and to our appreciation of the unique qualities of Cascade Head. Expect many flowers and incomparable ocean views.

Sat., July 4 -- No trip scheduled.



HIGH DESERT CHAPTER

Meeting: Tuesday, June 2 -- Techniques of Close-up Flower Photography. Meet in Room B-10, Bend High School, at 7:30 p.m.

BLUE MOUNTAIN CHAPTER

Field Trips

Sun., June 7 -- Morgan Lake, Union County. Carpool Hermiston HS 8:30 a.m. Carpool BMCC Pendleton 9:15 a.m. Rendezvous in Safeway Parking Lot in LaGrande at 10:15. Fantastic flowers atop the Blues! Should the unusually dry weather adversely affect the wildflowers of the Morgan Lake area we will go to Mount Emily instead. Members will be notified of the change in plans.

Sat., June 20, 1981 -- Wildflowers of the Tollgate Area. Carpool Hermiston HS at 8:30 a.m. Carpool BMCC Pendleton at 9:15 a.m. Rendezvous at Woodward Campground (west shore of Langdon Lake) at 10:15 a.m. Morning botanical walks at Woodward; afternoon walks at Target Meadows beginning at 1:00 p.m.

Fri-Sun, July 3,4,5 -- Wildflowers of Steens Mountain, Harney County. Meet at Frenchglen Hotel at 3:30 p.m., July 3. We will camp out at either Page Spring Campground or the Camper Corral (3 miles east of Frenchglen on Steens Mountain Loop Road). If there are sufficient participants we will attempt to rent a 15 passenger van from the Malheur Field Station for the trek over the Steens Loop Road. Plan ahead for this one!

Important Information: You should bring appropriate clothing, footwear, lunch, beverages, etc. on each trip. Carpools form in the parking lot at Hermiston High School (Front Entrance Parking Lot) and in the South Parking Lot at Blue Mountain Community College in Pendleton.

SISKIYOU CHAPTER

Meeting: Thursday, June 4 -- Where, When, and How: Favorite Botanizing Areas by chapter members who have been there. A slide program, last one until September. Bring your friends. Meet in Room 171, Science, SOSOC, Ashland, at 7:30 p.m.

Field Trips

Sat., June 13 -- Lost Creek Falls and Lost Lake near Shale City Road in the Cascades. Moderate one day hike. Wear sturdy shoes and bring a lunch and water. Meet Medford K-Mart, 8:00 a.m., Ashland Bi-Mart 8:30 a.m.

Sat-Sun, June 27-28 -- High Siskiyou Flora. We will hike 2-3 fairly level miles from Oregon Caves N.M. to Bigelow Lake (6000 ft.). Those wishing to continue will hike to Greyback Mountain, spend the night, and explore the mountain on the following day. If anyone wishes to rendezvous with us on Sunday for Greyback Mountain only, contact Jennifer Riefler, 482-1500. Meet Ashland Bi-Mart, 7:00 a.m., Medford K-Mart 7:30 a.m.

Sat., July 11 -- High Elevation Lakes and Mt. Etna. Easy one day hike in California's Klamath Mountains. Bring lunch and water. Darlene Southworth, leader. Meet Medford K-Mart 8:00 a.m., Ashland Bi-Mart 8:30 a.m.

EMERALD CHAPTER

Meetings:

Mon., June 1. Freeman Rowe, botany instructor at Lane Community College, will present a program on the "Natural History of Baja California." We will see slides and hear a discussion of the plants, animals, and habitats of this area. Freeman has just returned following a three-month visit to Baja California, where he has been a frequent visitor in early Spring. Meet at 7:15 p.m., Eugene City Library.

Mon., July 6. "Ferntastic Ferns and other Pteridological Trivia". A program of fern things: fern biology, fern identification; and fern varieties, with fern expert, David Wagner. Meet at 7:15 p.m., Eugene City Library.

Field Trips

Sat., June 20 -- Woahink Bog and other sphagnum habitats around Heceta Beach. Meet at South Eugene High School parking lot, 8:00 a.m. Limited participation. Call John Christy, 344-2400, leader, to sign up.

Sat., June 27 -- Iron Mountain on the South Santiam (an Obsidian trip). Meet at South Eugene High School parking lot, 8:00 a.m. Led by Robin and Ken Lodewick, NPSO members. Sign up required. Registration board is located at the Family YMCA, 2055 Patterson St. or call the Lodewicks, evenings, 344-6533.

Sat., July 11 -- Fairview Mountain - Bohemia Saddle in the Calopooya Mountains above Cottage Grove. Meet at the South Eugene High School parking lot, 8:00 a.m. Call Dave Wagner, leader, 686-3033, for additional details.

Sat., July 18 -- Blair Lake Meadows. In the foothills of the old Cascades above Oakridge, elevation 4,800. Meet at the South Eugene High School parking lot, 8:00 a.m. Leader, Charlene Simpson, (days) 686-3221.

SISKIYOU CHAPTER/SOSOC NATIVE PLANT GARDEN

Siskiyou Chapter and Southern Oregon State College have jointly begun a garden of native flora from southern Oregon. The garden is located next to the campus' new greenhouse. Trees and shrubs for a woodland, serpentine, and mixed plot have already been planted. Groundcover and wildflowers will be added in the future. The majority of plants have been obtained from a local nursery owned by a Siskiyou Chapter member. Suggestions and sources of other plants and seeds are welcomed; contact Dr. Nitsos at the SOSOC Biology Department. A "Thank you" to chapter members, Dr. Nitsos, and other SOSOC staff for their time in planning, landscape design, planting, and their monetary donations.

Cynthia Roberts

THE EDITOR'S VIEW

For just over two years, your NPSO Bulletin has been prepared and mailed from Ashland. Despite the time and effort it has taken each month to gather, edit, illustrate, paste up, fold, label, and mail out the 600 or so copies, we who have published the Bulletin have enjoyed a lot of satisfactions and rewards. Now it is time, however, for our new NPSO President, Dr. David Wagner, and his Editor, Linda Vorobik, to take over where we leave off.

We editors have been extremely fortunate to have had willing writers. Only a few times in these two years did we fear a shortage of copy. Not only have we enjoyed the labors of our regular contributors, but many other NPSO members have now and then sent in articles and news notes. This is as it should be--a Bulletin everyone contributes to--and we thank you all, very much, for your support over the past months.

I feel fortunate to have had Dr. Frank Lang, NPSO Past President, as co-editor. My job has been to gather and edit the copy and help with folding and mailing; Dr. Lang has done overall editing and provided numerous superb sketches, a real plus for our Bulletin, as well as helping with the task of mailing. I has been a pleasure to work with Dr. Lang, and I know I speak for all NPSO members in wishing him well during his sabbatical year at Harvard University, soon to begin.

Dr. Lang and I succeeded Florence Ebeling of Portland Chapter, as editors. As we began, we felt free to meld the many suggestions of NPSO members with our own ideas as we built upon the work of Mrs. Ebeling. Likewise, we hope Dr. Wagner and Linda Vorobik will also feel free to guide the Bulletin in their best judgment, making it an ever more effective voice for our Society. We wish the new editors well. Along with the Society as a whole, we will lend them our strong support.

Vern Crawford



MESSAGE FROM THE PAST PRESIDENT

It has been my pleasure to serve two terms as president of the Native Plant Society of Oregon and as co-editor of the Bulletin. I am grateful for the opportunity to meet and work with many fine people from throughout the state who share my enthusiasm for and interest in the flora of the Pacific Northwest.

Thanks to all of you for making my experience an enjoyable one, especially my fellow officers, members of the Board of Directors and my co-editor, Vern Crawford. Without Vern's help, my job would have been most difficult. The Society is very fortunate to have many dedicated, hard-working members like him.

I hope that our newly-elected president, Dave Wagner, and our new Bulletin Editor, Linda Vorobik, receive the same level of support and cooperation that Vern and I received from the NPSO membership. It made our efforts a pleasant experience.

My family and I are looking forward to an exciting year in the East. I will be working with Dr. Rolla Tryon at the Gray Herbarium at Harvard University getting recharged and refreshed.

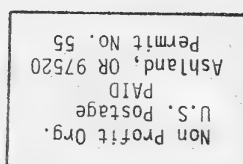
My best wishes to the Society in its efforts on behalf of the native plants of Oregon in the coming year.

Sincerely yours,

Frank A. Lang

Frank A. Lang
Past President, NPSO





The Editors
Native Plant Society of Oregon
Department of Biology
Southern Oregon State College
Ashland, Oregon 97520

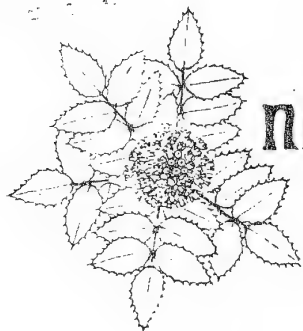
Native Plant Society of Oregon Bulletin Correspondence

Address:

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Eugene, OR 97403

For change of address or information on membership, contact your nearest chapter or Mary Falconer, 1920 Engle Ave., NW, Salem 97304
Contributions to the NPSO Bulletin or non-delivery notice should be sent to: The Editors, Native Plant Society of Oregon, Department of Biology, Southern Oregon State College, Ashland, Or 97520

The NPSO Bulletin is published monthly by the Native Plant Society of Oregon incorporated under the laws of the State of Oregon. You are invited to join. Membership includes Bulletin subscription. Dues are student \$5.00, regular member \$7.50, Sustaining member \$25.00, Patron \$100.00, Life member \$500.00. Others are welcome to use material from the NPSO Bulletin. Courtesy pleads, however, that credit be given to the author and to the Bulletin.



THE BULLETIN OF THE NATIVE PLANT SOCIETY OF OREGON

• OBJECTIVE •

To increase the knowledge of members and public
in identification and conservation of the native
plants of the Pacific Northwest.

VOL. XIV No. 7

JULY 1981

SPECIAL PLANT SPECIES LIST ADOPTED BY STATE OF OREGON

On June 22, 1981, Oregon Governor Vic Atiyeh signed a bill passed by the current legislature which formally adopted the Oregon Natural Heritage Plan prepared by the Oregon Natural Heritage Advisory Council. This event has considerable significance to rare plant work in Oregon, for included in the Plan is the first official state list of rare plants defined by statute. The defined purpose of this list, called "Special Plant Species", is to aid the Council in selecting and setting boundaries of a state-wide system of natural areas (called Natural Heritage Conservation Areas in the Plan). The list consists of plants which are so rare or of restricted distribution (or subject to extra-ordinary disturbance) that they would likely be under-represented in natural areas defined by the general system of community classification which forms the core of the Plan.

The list of plants included in the Natural Heritage Plan rests mainly on Rare, Threatened and Endangered Vascular Plants in Oregon -- an Interim Report (Siddall, et al., 1979) published in 1979 by the State Land Board. That report was a working document of the Oregon Natural Area Preserves Advisory Committee, predecessor of the Natural Heritage Advisory Council. The Plan list was made more current through a review of new information collected since the 1979 report. The Council has been mandated by the state to maintain a data bank with up-to-date information on special plant species (as well as other ecosystem data), but to date has not provided funds to carry out this activity. The Council presently depends on the information kept by the regional Endangered Species Office of the U.S. Fish and Wildlife Service, The Nature Conservancy, and especially by the Oregon Rare Plant Project spearheaded by Jean Siddall in Lake Oswego.

The plants on the list of Special Species are mostly placed into Priority categories. The first two priorities are roughly parallel to, but not equivalent to, the federal categories "Endangered" and "Threatened." The remainder are plant species of state concern only, although some may appear on other state lists, also. For instance, the Plan includes a few rare mosses, liverworts, and lichens, classes of plants not recognized by the federal Endangered Species Act. Some of our rarest plants in Oregon are in Priority 3, wide-ranging plants with few, or even only one, known populations in the state.

The Plan list of Special Plant Species was formally adopted as the Native Plant Society of Oregon Rare Plant List at the February 28 board meeting of NPSO in Salem. A copy of the list, separate from the Natural Heritage Plan and with an index, is being placed in the hands of each chapter president and the chairperson of the NPSO Endangered Plant Committee, Anne E. Kowalishen. It is to this list that the NPSO Code of Ethics (adopted in 1978 and reprinted elsewhere in this issue of the Bulletin) should particularly be applied. These are the plants to watch for, and care for, and to keep careful records about.

A NOTE FROM YOUR NEW EDITORS:

Beginning with this issue, the Bulletin of the Native Plant Society of Oregon will be produced in Eugene (although mailed from Ashland until we get our mailing permit changed.) According to the new by-law amendments, the President will appoint an editor with approval from the Board of Directors. Linda Vorobik, a doctoral student at the University of Oregon (studying *Arabis*), has been so named. She will be assisted by Dr. Dave Wagner and other members of the Emerald Chapter. The arrangement and editorial policy will remain little altered from that of our previous editors. (Vern Crawford and Dr. Frank Lang deserve a round of applause for a job well done!) Please follow the guidelines they prepared in the June, 1979 issue of the Bulletin. We will send a copy of these upon request to any potential contributor who lacks that issue. As always, we need copy by the 15th of each month, and we want lots! Either written or graphic material is welcome. Send all correspondence regarding the Bulletin to:

Linda Vorobik, NPSO Editor
Department of Biology
University of Oregon
Eugene, Oregon 97403

WILLAMETTE VALLEY CHAPTER

Field Trips:

Carpool at South Salem K-Mart, north side of parking lot, 8:00 a.m., except as noted. Contact trip leader for details.

Sat., July 11. Iron Mountain (with Salem Audubon). Irma Bunnell, leader (393-6159). Meet at K-Mart at 7:30 a.m.

Sat., July 18. Cascades. Wilbur Bluhm, leader (393-2934). Met at K-Mart at 7:30 a.m.

Sat., July 25. Cascades. Lois Eagan, leader. (393-2131).

Sat., Aug. 1. Jefferson Peak. Lois Eagan, leader (393-2131).

Sat., Aug. 8. Three Creeks-Tam MacArthur Rim. Clint Urey, leader (743-2802).

Sat., Aug. 15. Dwarf Mistletoe with Peter Paguet. Mariana Burnholdt, leader (585-2057).

Next regular meeting Sept. 21, 7:30 p.m.
Details in August Bulletin.

EMERALD CHAPTER

Meetings:

Monday, July 6. "Ferntastic Ferns and other Pteridological Trivia." A program of fern things; fern biology; fern identification; and fern varieties, with fern expert, David Wagner. Meet at the Natural History Museum, U of O Campus, 7:15 p.m. THIS IS A CHANGE IN LOCATION FOR ONE MEETING.

Monday, August 3. Gaylee Goodrich, Master's Degree student at the University of Oregon, Dept. of Biology, will present a program on several species of rare delphiniums that grow in western Oregon and Washington. Slides and discussion of some rare habitats as well as some of the flora of the original Willamette Valley will also be included. Meet at 7:15 p.m., Eugene City Library.

Field Trips:

Saturday, July 11. Fairview Mountain - Bohemia Saddle in the Calapooya Mountains above Cottage Grove. Meet at the South Eugene High School parking lot, 8:00 a.m. Call Dave Wagner, leader, 686-3033 for additional details.

Saturday, July 18. Blair Lake Meadows. In the foothills of the old Cascades above Oakridge, elevation 4,900. Meet at the South Eugene High School parking lot, 8:00 a.m.. Leader, Charlene Simpson (days) 686-3221.

HIGH DESERT CHAPTER

Field Trips:

July 4. Nature Conservancy Metolius River Preserve plant survey (Portland Chapter has expressed a desire to join us). Meet at McDonald's at 9:00 a.m., and at Sisters Ranger Station at 9:30 a.m. Bring sack lunch.

July 11-12. Overnight field trip to Steens Mt. Carvan leaves Bend at 7:00 a.m. Lunch in Frenchglen. Camp at Fish Lake Campground at the 7,000 ft. level. Leaders, Joyce Bork and Barbara Robinson.

PORTLAND CHAPTER

Meeting:

Tuesday, July 14, 7:00 p.m. PLEASE MAKE NOTE OF DAY CHANGE. Central Library, 801 S.W. 10th, Portland. Flowers of the Berry Garden. The program will be presented by Vern Marttala, Biologist, Photographer and member of the board of the Berry Garden.

Field trips:

Sat., 11 July. Badger Creek Roadless Area. Louise Godfrey and Ken Love, leaders. Carpool at State Motor Vehicles Department parking lot (NE 60th at Glisan) at 8:00 a.m., or the parking lot at Government Camp at 8:30 a.m. Prepare for a 3-4 mile hike into one of the few remaining unprotected roadless areas in the Mt. Hood National Forest.

Mr. Love and his wife Ruth are authors of a new book titled The Trails of Badger Creek, and longtime proponents of wilderness designation for this landscape.

Badger Creek will come before Congress for inclusion in the National Wilderness Preservation System within the next year. Come see it and let your opinion be heard.

Sat., 18 July. Multotorpor Bog. Dr. John Hammond, leader. Carpool at Handyman/Tri-Met's Park and Ride Lot (15550 SE McLaignlin Blvd.) in Oak Grove at 8:30 a.m. This marsh, recently acquired by Nature Conservancy, is unmatched in its sheer variety of flora. Dr. Hammond recommends galoshes or wading boots for those who have them. Expect a day of easy flat walking around the edge of the bog and many, many plants.

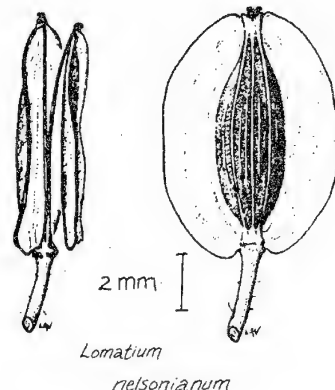
Sat., Sun., 25-6 July. Sycan Marsh. Lynn Cornelius, leader. Meet at The Nature Conservancy cabin at Sycan Marsh at 12:00 a.m. on Saturday. Take State Highway 31 to Silver Lake. Proceed south from Silver Lake on gravel Forest Service road past Thompson Reservoir to the marsh. The cabin is reached via a signed left turn about 5 miles south of the junction of 2 forest service roads at the NW corner of the marsh (easier to find than to describe).

This trip is a logical followup to the excellent program Notes on The Plant Communities of Sycan Marsh, which Lynn presented at our April meeting. The marsh will be relatively dry by late July and the flowers should be at their best.

Lynn recommends rubber boots, mosquito repellent and tents with long netting. The driving distance is 300 miles one way. Allow 6-7 hours. Camping is possible at Thompson Reservoir. Specifics of the Sunday trip are dependent upon your interests.

Sat. 1 Aug. Mt. Chinidere. Dr. George Jeffcott, leader. Carpool at State Motor Vehicles Department parking lot (NE 60th & Glisan) at 8:00 a.m., or the Charburger at the first Hood River exit at 8:30 a.m. The summit of 4900' Mt. Chinidere is an easy 1½ mile hike which offers open views to Wahtum Lake, Benson Plateau and Mt. St. Helens. Bring mosquito repellent.

Sat., 8 Aug. Elk Cove. Leader undesignated. Carpool at Handyman/Tri-Met Park and Ride Lot (address above) in Oak Grove at 7:00 a.m., or at Cooper Spur Junction on Highway 35 at 8:30. This is an 8 mile round trip hike through magnificent alpine scenery on the north side of Mt. Hood.



ECOLOGICAL NOTES

Limpy Rock Research Area has High Diversity of Epiparasites

Between 1975 and 1978, I was involved with Jeanne Moore, Yvonne Knouse, Alice Parker, Dorothy Terry, and other members of the Limpy Rock Botanical Committee in an ecological survey of the proposed Limpy Rock Research Natural Area. This unique and valuable botanical area is located in the Umpqua National Forest, Steamboat Ranger District, on the North Umpqua River in Douglas County. I am happy to be able to report now that, after over 5 years of effort on the part of the Committee and other interested botanists, 1800 acres of forest has been set aside as a Research Natural Area at Limpy Rock. Incidentally, this is the only such area within the entire Umpqua National Forest.

The Limpy Rock area possesses an extremely high diversity of non-green flowering plants in the families Ericaceae and Orchidaceae. On July 12, 1976, during a short time and within a relatively restricted area I saw Ericaceae: Pyrola aphylla (leafless pyrola), Pleuricospora fimbriolata (sierra sap), Hemitomes congestum (gnome plant), Allotropia virgata (candystick); Orchidaceae: Ebuorphyton austiniae (phantom orchid); and Corallorhiza maculata (spotted coral root). The Pleuricospora and the Hemitomes are on the Oregon R. & E. Review List.

All of the species listed lack chlorophyll and thus are dependent upon some source of organic material outside their own systems. At one time these plants were described as "saprophytes", but it is now known that they must establish a close relationship with one or more other species of living plants in order to survive. Research has shown (see Björkman (1960) Physiol Plantarum 13, 308-329) that some species of non-green Ericaceous plants are actually epiparasites--part of a complicated ecological relationship in which 3 different plants, including a fungus and a conifer, are interconnected, with flow of nutrients passing among all 3. As for the orchids, it is well known that all species thus far investigated possess an obligate mycorrhizal relationship with a fungus.

The Limpy Rock area must have an unique combination of physical and biological attributes which has fostered the development of these complicated and relatively rare relationships. Thanks to years of effort on the part of the Limpy Rock Botanical Committee and others, a Research Natural Area has now been established in this important area, and ecological investigations of these unique conditions can begin without the threat of disturbance due to forestry activities.

For more information about the Limpy Rock Research Natural Area, contact Yvonne Knouse, 1662 Whistlers Lane, Roseburg, OR 97470.

By Rhoda Love
Emerald Chapter

HELP WANTED

The Portland Park Bureau volunteers have initiated a project to plant five acres on the east slope of Mt. Tabor Park with wildflowers. The area is semi-shady, located under a stand of native Douglas Fir. It is hoped that the display will focus on the native flora of the Willamette Valley, although some Washington and California species will be acceptable. The committee is seeking donations of seed from private gardens for planting in the fall.

If you can help, please send labeled seed to:

Anne Kowalishen
Mt. Tabor Par, Portland Park Bureau
6437 SE Division Street
Portland, Oregon 97206

Include the following information with your seed:

- Botanical Name of Plant
- Where collected
- Date collected
- Name, address, and telephone number of individual collector

If you have any questions about the Mt. Tabor Wildflower Project, please contact Anne Kowalishen at 248-4397.



WELCOME TO NEW MEMBERS:

Emerald

Linda A. Beach
 Abraham H. Blank
 Marjorie M. Colpitts
 Sharon Lee Dederer
 Gaylee Goodrich
 Helen Hughes
 Yvonne M. Knouse
 Evelyn Ruth Lee
 Nels H. Osterberg
 James Burch Powell
 Jim Rudolph

High Desert

Lawrence C. Thomas

Mid-Columbia

Mildred L. Chapin

Portland

Barbara Ann Becker
 Stephen Brown
 Barbara Fox
 Charlotte Gafton
 Ruby C. & Lewis R. Gibbs
 John R. Gibson
 Charlotte Graydon
 Charlie Green
 Mr. & Mrs. Harold K. Hanson
 David Heatlie
 Phillip N. Jones
 Stephon N. Kasch
 Wanda Loutzenhiser
 Joe Mealey
 Sandy Meyer
 Leslie J. Swope
 Frederick Turner

Siskiyou

Barry Goldfarb
 Vivian Lake

Willamette

D. L. Callicrate
 James H. Conley
 Margie J. Fromherz
 Kethryn Gearheard
 Doris R. McDougall
 Florence C. Manning
 Don J. Mason
 Frank & Winifred Moore



Aster vialis

5 cm

PUBLICATIONS OF INTEREST

This past year I have seen several publications that are of special interest to those concerned with plant conservation. I would like to share them with you.

Rare Plant Conservation: Geographical Data Organization. Publication Office, The New York Botanical Garden, Bronx, N.Y. 10458, \$26.25. This is the proceedings of Geographical Data Organization for Rare Plant Conservation Symposium sponsored by the U.S. National Park Service and held at the New York Botanical Garden in 1977. It consists of 24 papers based on lectures and discussions at the symposium. It deals with such topics as sources of information on rare or endangered plants and strategies for data organization.

The Sinking Ark, by Norman Myers, Pergamon Press, 1979. \$9.95. This book is a thoughtful and well informed discussion of the rapidly increasing rate of extinction of species. It deals with the issue on a world-wide basis and is a thought provoking book.

Endangered Plant Species of the World and their Endangered Habitats: A Compilation of the Literature. Publications Office, New York Botanical Garden, Bronx, N.Y. 10458. \$3.50.. This is a comprehensive bibliography of literature available up to 1978. For 10¢ a page, the publisher will send you reproductions of articles included in this bibliography.

Endangered Species Technical Bulletin. U.S. Fish & Wildlife Service, Endangered Species Program, Washington, D.C. 20240. No cost. This bulletin comes out every two months and has information on many of the activities happening nationally with USF&WS programs. Write the above address to get on their mailing list. Yearly indexes are available, also.

A. E. Kowalishen

ENDANGERED PLANTS ON TELEVISION!

You may have been surprised recently to have seen a short commercial on KGW (Channel 8) TV on endangered plants, sponsored by NPSO. This 30 second public service commercial was accomplished entirely through the efforts of Mrs. Jean Huffstutter, who single-handedly selected slides, music and the message. She worked with KGW and the result has been a beautiful message about our endangered flora. Thank you, Jean, for your persistence in getting this public service announcement aired.

A. E. Kowalishen



GUIDELINES AND ETHICAL CODE,
NATIVE PLANT SOCIETY OF OREGON
(Adopted 1978)

GENERAL GUIDELINE: Think twice. Use discretion. A plant in place is worth two in the hand. Love thy flora.

I. Chapter Guidelines

1. Know your rare, threatened and endangered species. Know your fragile environments and unique biotic communities.
2. Be alert to threats to native plants and their habitats. Appoint watchdog committees to keep aware of these threats and inform the chapter.
3. Take action to protect native plants. Work with all groups and the general public to protect native plants and their habitats. Be prepared to salvage plants where they are threatened by outright destruction. Help eradicate particularly aggressive and successful exotic plants that threaten native plants. Take responsible outings.
4. Educate your members and the public about native plants, and encourage them to use good judgment in the study, enjoyment, and use of native plants.
5. Encourage your members to grow native plants only from seeds or cuttings.

II. Out There Among the Plants

1. Outings for whatever purpose must never endanger a plant population. Encourage non-destructive modes of learning and enjoyment: photography, artwork, scientific description, esthetic prose and poetry, and so on.
2. On group outings (field trips, conservation activities, class field studies), group leaders must take responsibility for protecting native plants from the activities of the group. All participants should understand the goal of plant protection, the purpose of the outing, and the means by which they can make the least impact on plants and the natural habitat.
3. Know where endangered species are growing and plan outings with this knowledge in mind.
4. Respect private and public property. Do not trespass. Know the regulations for use of the land and natural resources--public or private--your group is entering.
5. Respect the habitat as a whole. Avoid disturbing wildlife, such as nesting birds and nesting hornets.
6. Be sensitive to the human foot as a threat to plants. Visits to fragile environments should be carefully planned. Students should be given adequate direction by their instructor, and excessive collecting should be discouraged. Better one person enter a fragile area to identify a plant than the whole group.

5

7. Collecting should be considered only when identification cannot be made in the field or when it will contribute significantly to educational or scientific objectives. Collecting for whatever purpose should be done as inconspicuously as possible. Casual observers may not understand the reasons for collecting and may feel license to do likewise.
8. Collecting must never endanger a plant population. Collect seeds or cuttings in preference to whole plants. Do not collect underground plant parts except for identification purposes. Avoid excessive collecting: this calls for exercise of good judgment by the collector. Consider the use of rules of thumb for judging whether to pick or not to pick. Encourage group study of one specimen. Consider using weeds, garden species, or lab-grown specimens for educational purposes.

III. Using Native Plants

1. Use of native plants--in wildflower shows, plant sales, and horticulture--must never threaten their populations.
2. Native plant species for sale should be obtained by salvage, seeds, or cuttings--in that order of priority--and whole plants should never be dug up, except for salvage. Seeds should not be sold. Growers must exercise discretion in collecting seeds and cuttings to avoid endangering plant populations.
3. Native plants for sale should state on the label how obtained or grown. Chapters should consider certifying commercial growers who follow good ethical practice, and should urge the public not to buy unless plants were obtained or grown according to these guidelines.
4. The sale and use of particularly aggressive and successful exotic plant species, such as gorse, broom, and pampas grass, should be discouraged.
5. Salvage of native plants should be encouraged when their destruction is certain: at quarries, mines, dams, building construction sites, road construction sites. Salvage is not necessarily called for, however, on logging sites, some recreational areas, and rangeland. Salvaged plants should be kept potted long enough before sale to ensure that they will survive the shock of transplant.
6. Wildflower shows should make maximum use of their educational potential. Inform the public of the goals of NPSO; explain the guidelines your chapter follows in studying, enjoying, and using native plants--including guidelines followed in collecting for the show; consider using all other educational options (slides, artwork, publications, herbarium collections, news media, etc.); and continue the educational "life" of display materials after the show by donating them to schools, libraries, or other constructive uses.

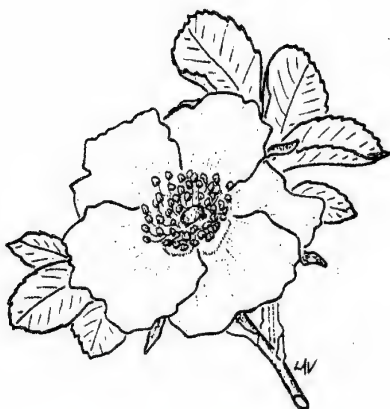


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The Editor
Native Plant Society of Oregon
Department of Biology
University of Oregon
Eugene, Oregon 97403

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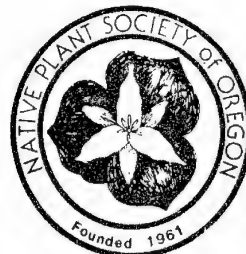
Rosa nutkana Presl
L.A. Vorebik © 1981

NATIVE PLANT SOCIETY OF OREGON

☐ Application for membership

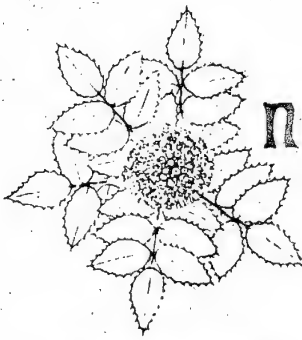
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THE **BULLETIN** OF THE
NATIVE PLANT SOCIETY of OREGON

• OBJECTIVE •

To increase the knowledge of members and public
in identification and conservation of the native
plants of the Pacific Northwest.

Vol. XIV No. 8

AUGUST 1981

FROM THE EDITORS

With our second Bulletin out, I sigh with relief and satisfaction at again jumbling news, notes and other native plant info onto six pages! The transition from Ashland to Eugene has been smooth; many thanks to Frank Lang and Vern Crawford, our previous editors. I encourage members to send native plant items and especially field trip reports. Copy due by the 15th of each month. Send to:

Linda Vorobik, NPSO Editor
Department of Biology, U of OR
Eugene OR 97403

CHAPTER NEWS

PORTLAND CHAPTER

Field Trips:

Sat., 8 Aug. Elk Cove. Leader undesignated. Carpool at Handyman/Tri-Met Park and Ride Lot in Oak Grove at 7:00 a.m., or at Cooper Spur Junction on Highway 35 at 8:30. This is an 8 mile round trip hike through magnificent alpine scenery on the north side of Mt. Hood.

Sat., 15 Aug. Tam McArthur Rim. Shep Wilson, leader. Met at 10 a.m. at Sisters Ranger Station. This is a 1200' climb in 2 miles to the northeast shoulder of Broken Top. Shep recommends Elizabeth Horn's Wildflowers I for a text. He claims you'll see them all. Consult either Shep or Joyce Beeman concerning arrangements.

Sat., 22 Aug. Bird Creek and Bird Creek Meadows (Mt. Adams). Ruth Hansen, leader. Carpool at State Motor Vehicles Division parking lot (NE 60th and Glisan) at 7:30 a.m. Drive to Bird Lake and hike along Bird Creek (trail no. 105) to an intersection with trail No. 3 which leads eastward to the Meadows. The round trip walking totals about 3 miles. Bird Creek Meadows is well known as one of the premier flower fields in the Pacific Northwest, but Ruth says it's anticlimactic after walking up along the Creek. Don't miss it! Bring along some insect repellent.

Sat., Aug. 29. Vista Ridge/Wy'East Basin. Louise Godfrey, leader. Carpool at State Motor Vehicles Division parking lot (address above) at 8:00 a.m. This hike is along a gradually climbing forest trail for 3 miles to Wy'East Basin, one of Mt. Hood's fine subalpine meadows. Those wishing to climb further may continue up Vista Ridge through alpine landscapes toward Barrett Spur (7800'), a former Mt. Hood.

Sat. 5 Sept. Labor Day Weekend. No trip scheduled.

Sat. 12 Sept. Breitenbush/Papoose Lakes Area. Wilbur Bluhm, leader. Carpool at Handyman/Tri-Met Park and Ride Lot (address above) in Oak Grove at 7:30 a.m. Take Highway 224 to Estacada, Ripplebrook (note: in the National Forest this route may be designated No. 46) and across 6-8 miles of rough road to a junction with S-42. Wilbur will meet us there at 9:30. This is an easy 4 mile round trip hike through at least three distinct habitats; wet mountain meadow, open subalpine forest and dry rock scree. Wilbur expects to see Gentiana calycosa, Microseris borealis, Gaultheria humifusa plus emerging fall color on the huckleberries and mountainash. This is not a trip to miss!

WILLAMETTE VALLEY CHAPTER

Meeting:

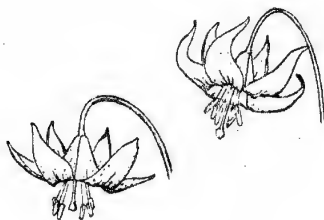
Monday, September 21, First Methodist Church, Salem, 7:30 p.m. For details see September issue of BULLETIN.

Field Trips:

Carpool at south Salem K-Mart, north side of parking lot, 8:00 a.m. Call leader for additional information, or trip coordinators Margo and Bob Wing (370-7350)

Sat., August 8. Three Creeks-Tam McArthur Rim. Jack Bailey, leader. (394-2414)

Sat., August 15. Dwarf Mistletoe with Peter Paquet. Marlana Bornholdt, leader (505-2057)



EMERALD CHAPTER

Meetings:

Monday, August 3.. Gaylee Goodrich, Master's Degree student at the University of Oregon, Dept. of Biology, will present a program on several species of rare delphiniums that grow in western Oregon and Washington. Slides and discussion of some rare habitats as well as some of the flora of the original Willamette Valley will also be included. Meet at 7:15 p.m., Eugene City Library.

Monday, September 14. Ken Hixson, Emerald Chapter member and long time plant lover, will present a demonstration and examples of the propagation of some of the native wild flowers. He will also share some book references and information about native plant nurseries. THIS IS THE SECOND MONDAY OF THE MONTH to avoid Labor Day. Meet at 7:15 p.m., Eugene City Library.

Field Trips:

Saturday, August 15. Rush Meadow and Marsh Communities of the Lane County Coast. Margaret Markley, Emerald Chapter member and Florence resident, will lead us to her favorite sites in search of late summer flowers of set places. Meet at the South Eugene High School parking lot, 8:00 a.m., or in Florence at the Junction of Highways 126 and 101 at 9:30 a.m. Call Charlene Simpson, 686-3221 (days) for additional details.

Lane County Fair:

August 18-23. Come see us at the Fair. The Emerald Chapter will have a display and membership promotional in the flower section. Call Charlene 686-3221 (days) or 686-1094 (eves) if you can help.

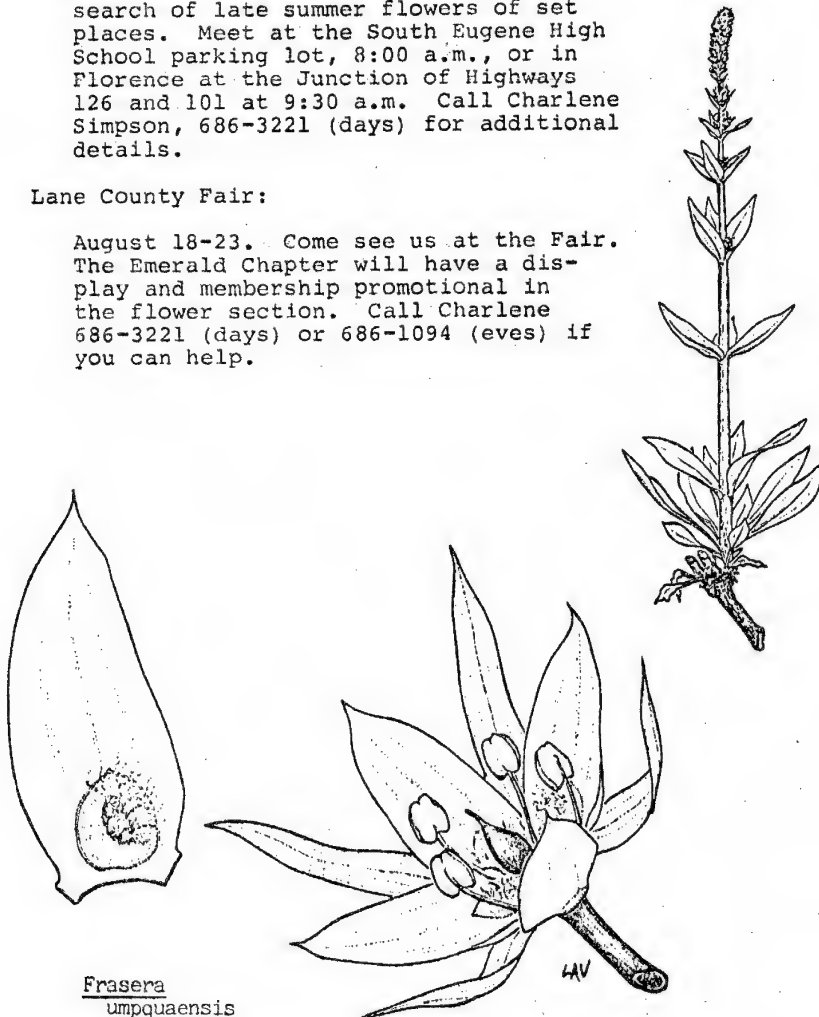
Field Trip Report, Emerald Chapter NPSO

Fairview Mountain, 11 July 1981

Eight native plant lovers turned out in sparkling weather on July 11, 1981, for an anniversary field-trip to Fairview Mountain. The anniversary was of William H. Baker's publication of his florula (little flora), "Plants of Fairview Mountain, Calapooya Range, Oregon," which appeared in The American Midland Naturalist in July, 1951 (Vol. 46, pp. 132-173). We hoped to relocate some of his discoveries and, perhaps, to find something not listed by him. We took the long way up, through Oakridge, which led us by Holland Meadows. The number of flowers seen through the car windows spoke to the promise of Holland Meadows being worthy of a special field-trip in the future. The roadsides were brightly decorated with Aquilegia, Dicentra, and Lupinus latifolius. Most striking were two pure white albinos standing out in huge masses of pink Phlox adsurgens. Along Bohemia Divide the Penstemon cardwellii was absolutely stunning.

Our first botanizing stop was brought on by a radiator which boiled over, fortuitously, on a flower-strewn south slope just below the summit of Fairview Mountain. We had identified 31 different plants in bloom before the radiator cooled. The most photographed flower at this site was Linanthastrum nuttallii, with Linum lewisii and Orthocarpus imbricatus close seconds. After a leisurely lunch at Fairview's summit, we spent most of the afternoon crawling around the rocky northeast slope just below. Here we identified 67 different flowering plants, almost all in bloom. (a few Lomatiums were identified in fruit). We spent many minutes wrestling with our Sedum keys before getting the three species present sorted out to everyone's satisfaction. An early prize was the rare Erigeron cascadenis, nestled in cracks of cliffs embroidered with Penstemon rupicola. Our first encounter with Polypodium hesperium and Heuchera micrantha was in the damp, dark recess of an old, abandoned mine shaft. Only eight feet deep, half a dozen of us crowded in to share the view out the mouth of the cave-like shaft framing Diamond Peak.

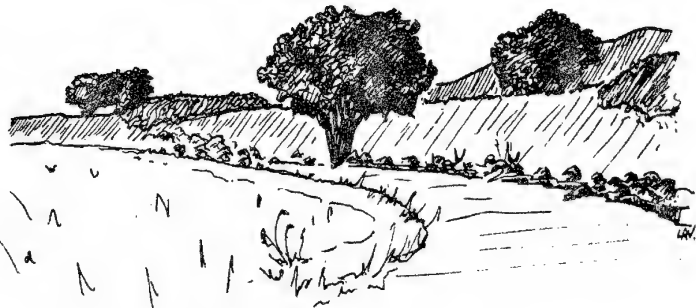
In the end, we found four species not reported from Fairview by Dr. Baker 30 years ago. Corylus cornuta and Rhamnus purshiana were found as scattered individuals, and in one spot the Sedum had Orobanche uniflora on it. The highlight of the day was the discovery of Frasera umpquaensis, making Fairview Mountain the second most northern site for this species. Several dozen plants were found, including many seedlings. The flowers on this had not quite yet begun to open at the time of our visit.



Frasera
umpquaensis

(continued next page)

One last stop near Musick Mine gave us an opportunity to study a number of bog-type plants near the stream. Here we were able to add a fern to Baker's list, Thelypteris nevadensis. A large clump was in the final stages of uncurling its delicate fronds. Also here were Trifolium and the dainty orchid, Listera caurina, described by Baker as rare in this area. With a final salute to the mountain above, we piled into the cars and headed home, ending a happy day for us all.



SISKIYOU CHAPTER

SISKIYOU WILDFLOWER SHOW A GREAT SUCCESS

Several thousand Independence Day visitors to Ashland's Lithia Park were treated to the fourth annual Hollenbeck Memorial Wildflower Show. While temperatures soared into the 90's, Siskiyou Chapter members tended the exhibit of cut native blossoms, leaves, and cones beneath the cool shade of leafy sycamores. Chapter members had collected representative species from both the Cascades and the Siskiyous. Member Marcella Ring displayed five of her outstanding watercolor portraits of native plants, and member Dave Rogers prepared a display of native cones. Thanks are due to all who helped make this another successful show, especially Jennifer Riefler, organizer of this year's event.

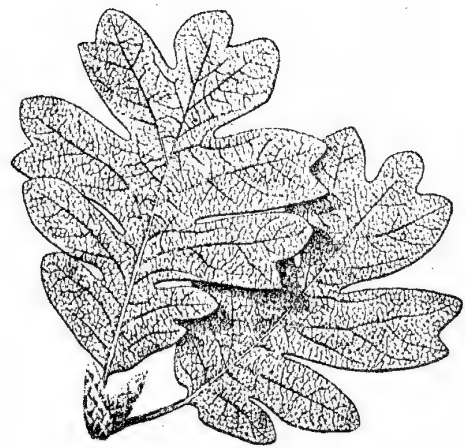
Vern Crawford

Field Trips:

Sat., Aug 8. Potluck at Joy's on Neil Creek. Bring a main dish and your own beverage and utensils (chilled foods should be kept in a cooler). Meet at Bi-Mart, Ashland, at 1:00 p.m. First we will botanize up the trail along beautiful Neil Creek; then we will return to the Joy's by 3:00 for the picnic. Bring friends and the whole family for this annual event. For information, call Jennifer Stone, 482-1400.

Sat., Aug. 29. Incised Mazama Pumice Canyons. Su Blumenthal, leader. This trip into the southern Oregon Cascades north of Prospect will provide us interesting geologic and floral discoveries. Bring lunch and water. Meet 8:00 Bi-Mart, Ashland, and 8:30 K-Mart, Medford.

Next Meeting: Thurs., Sept. 3, 7:30 p.m. in Rm. 171, Science Building, SOSOC, Ashland. Program to be announced.



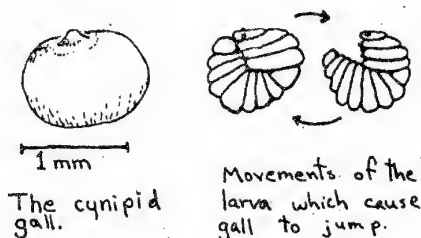
JUMPING GALLS ON OREGON WHITE OAK

Not too long ago a young man brought a most amazing item into the Herbarium for identification. He had a glass petri dish filled with what looked like mustard seeds, dancing and jumping about spontaneously with great vigor. I couldn't tell him what he had, but was immediately fascinated and determined to find out what was at hand. He said the little "seeds" fell out of oak or ash trees on a canvas tarp stretched out for shade. Guessing that the motivating agent was an insect, a telephone call to Dr. J. Lattin of the Oregon State University Entomology Department turned up some answers. Dr. Lattin informed us these were cynipid wasp galls, formed by much the same kind of wasp that forms the large, freckled galls on the underside of Quercus garryana leaves. Both kind of gall may be found on the same leaf.

Considering the good press the Mexican Jumping Bean has gotten, I was surprised that only one biologist of a dozen or more queried in Eugene had heard of the Oregon Jumping Gall. It's my hunch that this remarkable plant-insect interaction is worth describing for those NPSO members who might be unfamiliar with it. These galls are quite uniform in size, barely over a millimeter long, smooth, elliptical in shape, and having a protuberance on the side where once attached to the leaf. The gall itself is an abnormal outgrowth of the underside of the oak leaf induced by the larva of the wasp which resides within. The resemblance to a mustard seed, even as to color, is marked. Inside the thin, firm shell of the gall is a white, segmented larva, curled over with its head by its tail. At the slightest touch, the larva uncurls and curls again, as if by reflex. However, although quite quick, this movement clearly does not have enough snap to account for the ability of the galls to jump two or more centimeters (more than 20 times their diameter!) straight up. My hypothesis for the mechanism of jumping is that the uncurling of the larva causes a deformation (elongation and narrowing) of the rigid wall of the gall, and after the larva curls up again the wall snaps outward suddenly like a pinched ping-pong ball. If the gall is resting on a hard surface, this sudden return to roundness would cause the gall to spring into the air.

(continued next page)

JUMPING GALLS ON WHITE OAK, CONTINUED



Whatever the details of the mechanism, the Oregon Jumping Gall certainly jumps far better than the Mexican Jumping Bean if measured in diameters of lift-off. It may be late in the season to find many of these galls. Now, in late July, I find most have already dropped off the leaves. Their presence is indicated by small discolored spots on a leaf. Young galls are whitish while old, inactive ones are dark brown. The most active ones are pale yellow or very light tan. These should easily rub off into your hand, and may jump right out of your hand if not immediately dropped into a container! Despite the lateness of the season, a search is worthwhile; the reward is one of Oregon's true Wonders of Nature: the Oregon Jumping Gall.

David Wagner
Eugene

ECOLOGICAL NOTES

Are Cinnabar Moths a Threat to Native Senecios?

Cinnabar moths (*Tyria jacobaea*) were introduced in Linn and Coos Counties in the early 1960's in an attempt to control the poisonous weedy plant tansy ragwort (*Senecio jacobaea*). Both the ragwort and the moth are natives of northern Europe. There is some anecdotal evidence that the moths may be more abundant than usual--at least in the mid-Willamette Valley--this summer. A good many laypersons have noticed them and begun to ask what they are. The moths are brightly colored--red and black, fly in the daytime, and are sometimes misidentified as small red and black butterflies.

Tests made before the introduction of cinnabar moth indicated that the insect's sole food was *Senecio jacobaea*. However, both adult and larval *Tyria* have been seen on other species of *Senecio* in Oregon.

Hitchcock lists approximately 13 species of native *Senecio jacobaea* in Western Oregon. Two of these, *S. flottii* and *S. hesperius* are on the Oregon Rare & Endangered List.

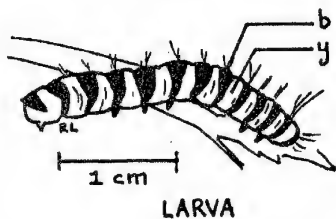
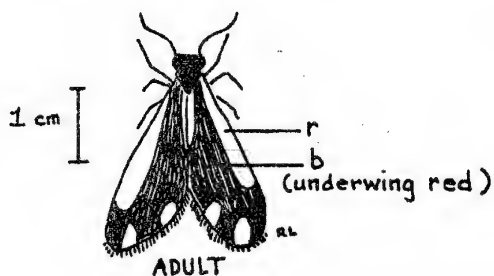
We should all be aware of the problem of possible host-switching in the cinnabar moth. Please report to the editors of this *Bulletin* if you observe adult cinnabars ovipositing or larval cinnabars feeding on native *Senecio* or on other plants.

The larvae are distinctively colored with bright orange (or yellow) and black alternative bands. On tansy ragwort they feed in groups and prefer the flowering heads to the foliage. The moths have a single generation per year. The adults fly from April through July and lay their yellow eggs in clusters on the under surfaces of leaves. The larvae hatch in approximately 2 weeks and feed until late summer. The pupae spend the winter on the ground near the plants. (See Oregon State Extension Service Circular #796.)

(Note: Cinnabar moths are not at the present time controlling the rapid spread of tansy ragwort in Western Oregon, and biological control agents are testing a European ragwort-eating root weevil as a possible additional control agent.)

Rhoda Love
Emerald Chapter

Cinnabar moth
(*Tyria jacobaea*)



b=black, r=red, y=yellow

[Editor's note: I have noticed many Cinnabar moth larvae on a variety of weeds in my garden, although the only plant I am sure the larvae are foraging on is the annual weed, *Senecio vulgaris*. John Christy also reported the larvae on another weedy *Senecio*, *S. sylvaticus*, in clearcuts near Mapleton. Unfortunately the moth hasn't restricted itself to introduced European weeds: Dave Wagner in 1979 reported the larvae on *Senecio triangularis*, a native, though common Groundsel.]

Congratulations to Portland's Anne Kowalishen for election as chairman of the Association of Western Native Plant Societies (AWNPS). The following four notes are items of interest from the Society's newsletter, Hesperian.

ASSOCIATION OFFICERS ELECTED

Officers to serve the Association through the annual meeting in 1981 were elected at the Phoenix meeting. The officers elected are:

CHAIRMAN - Ms. Anne Kowalishen
4949 N.E. 34th
Portland, OR 97211

VICE-CHAIRMAN - Mr. J. Scott Peterson
Dept. Of Botany & Plant Pathology
Colorado State University
Fort Collins, CO 80523

BULLETIN EDITOR - Mr. R. Mitchell Beauchamp
1843 E. 16th St.
National City, CA 92050

Input from individuals concerned with the native flora is welcome by these officers or individual delegates of member societies.

Subscription to the Association newsletter, HESPERIAN, is available to individuals other than officers of member societies at a cost of \$2/year, payable to the AWNPS in care of the Editor

AWNPS SUPPORT APPLAUDED

Organization of the Association of Western Native Plant Societies has involved three separate meetings. Catalyst for initiating the Association would seem to go to Ruth Hansen of the Native Plant Society of Oregon for her encouraging words and constructive comments.

Credit for nurturing the growing Association goes to many others too. Organization for the Nevada meeting was arranged by Loring and Margaret Williams and Kay Fowler; for the Utah meeting, Dick Hildreth and Duane Atwood; and the Arizona meeting, Leroy Brady, Bill McGinnis, Marc Mittleman and Tim Clark. Meeting space was provided by the University of Nevada at Reno; University of Utah and Desert Botanic Gardens. Post-meeting trips were hosted by Native Plants, Inc. and Boyce-Thompson Southwestern Arboretum. Costs for these meetings was borne personally by many members or by meager state society treasuries. It is this dedication to the appreciation of native plants through contributions of money and time that will keep the Association moving along and increasing the number of state societies and chapters.

RMB



AWNPS BYLAWS DRAFT

ARTICLE I. PURPOSE OF THE SOCIETY

-Section 1. Purpose of the Society

The purpose of the Association of Western Native Plant Societies is many fold and stated in the following Statement of Purposes:

AWNPS Statement of Purposes:

1. To endorse the purposes and goals of individual societies regarding -
-promotion of public knowledge and awareness of native plants, and
-encouragement of the cultivation and landscape use of native plants.
2. To facilitate exchange of information and cooperative action among native plant societies of the western United States.
3. To formulate and publicize consensus views on acts affecting the native flora.
4. To work toward assuring the continued existence of native vegetative diversity within member states.

AWNPS HOLDS ANNUAL MEETING

Recently the Association of Western Native Plant Societies held its annual meeting in Phoenix, Arizona, the 1980 host state. A set of by-laws was adopted, giving us a loose organization form; not too restrictive for membership, not so loose as to fall apart.

It was an exiting meeting. We are now an organization that has the capacity to act on behalf of the native flora of the entire western United States. Our bulletin will receive wide distribution with possibilities for communication with large numbers of people. Our bulletin is set up with self-described "passive editor" Mitch Beauchamp, who is soliciting material from the membership for inclusion into the bulletin. It is the means for all of us to communicate with each other; what projects is your Society working on? How are you raising money? What areas have regional problems that will affect native flora? What ideas do you have for the Association of Western Native Plant Societies?

AWNPS is now into its second year, and with your response, input and energies, it will be an even better year than the first.

Annie Kowalishen





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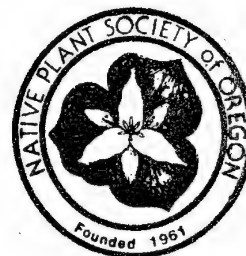
Rosa nutkana Presl
L.A. Vorobik © 1981

NATIVE PLANT SOCIETY OF OREGON

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☐ Address change

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| <input type="radio"/> Patron | 100.00 |
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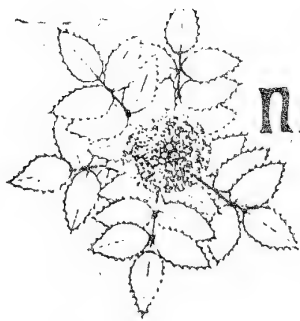


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VOL. XIV No. 9

SEPTEMBER 1981

CHAPTER NEWS

EMERALD CHAPTER

Meetings:

Monday, September 14. Ken Hixson, Emerald Chapter member and long time plant lover, will present a demonstration and examples of the propagation of some of the native wild flowers. He will also share some book references and information about native plant nurseries. THIS IS THE SECOND MONDAY OF THE MONTH to avoid Labor Day. Meet at 7:15 p.m., Eugene City Library.

Monday, October 5. Rhoda Love, Ph.D., Dept. of Biology, U of O, Emerald Chapter member, will present a program on Hawthorn systematics and hybridization. She will draw on her recent research for her doctoral dissertation. Her degree was awarded in June 1981. Meet at 7:15 p.m., Eugene City Library.

Monday, November 2. Alan Curtis, Emerald Chapter member and BLM botanist, will show us slides of the native plants of Hawaii. Alan and his wife, Marianne, visited the Islands in July.

LANE COUNTY FAIR - August 18-23.

The Emerald Chapter sponsored a display and membership promotional in the flower section. This was well worth our time and effort as it provided maximum public exposure for our society. The Lane County Fair, as always, was a well attended event, drawing thousands.

Field Trip Report, Emerald Chapter NPSO

Blair Lake Meadows, July 17, 1981.

Eight Emerald Chapter members and friends visited the flower abundant Blair Lake Meadows in the Oak Ridge Ranger District. Seepage, watering the meadows, drains into Blair Lake, elev. 4,900, which is situated on the western slopes of the Old Oregon Cascades.

Sightings added to a check list of flora already compiled by Emerald, NPSO, visitors on July 21, 1979, and two trips led by Rhoda Love, Emerald member, on July 5 and 11, 1981. A composite list of 122 flowering species for this area is on file and available on request.

We botanized along the incoming road and lower meadow and stream bed until noon enjoying Pedicularis bracteosa, Habenaria dilatata, Sisyrinchium angustifolium, Mertensia paniculata, Boykinia major, Angelica genuflexa, Hypericum formosum var. Scouleri and, after much debate over fruit wings and ribs, Ligusticum apiifolium.

It took little urging to break for lunch and retreat back to the Campground where we joined the Luneskis, who were staying the night.

After a leisurly lunch we hiked to the upper meadows and were rewarded by fields of color provided by: Delphinium menziesii, Lilium columbianum, Gilia aggregata, Calochortus subalpinus, and Castilleja miniata --- a photographer's dream! Photographers in our group were not lacking. Four cameras clicked off rolls of film, endearing us to Kodak.

Underfoot, and available only to photographers at the price of a wet knee, were Mimulus moschatus, Orthocarpus imbricatus, and Hypericum anagalloides.

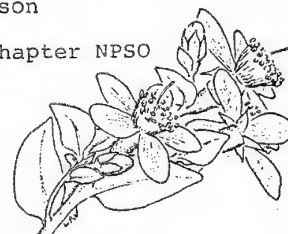
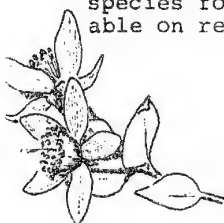
Rising above the meadow to the ridge at forest's edge caused enough physical exertion to give in to the pleadings for a beverage break and rest. We then followed the ridge trail a short distance among Polemonium carneum, Galium oreganum, Smilacina stellata and Anemone deltoidea, before bushwacking down through forests and thickets to emerge, once again, in meadow and wet ground.

A special delight was a concentration of brilliant scarlet, Gilia aggregata, literally alive with feeding hummingbirds. We sat very quietly while photographers with mounted telephoto lenses crouched close to waiting Gilia trumpets. The flurry of hummingbird activity, each aggressively defending or challenging for a favorite feeding station, was a highlight of our trip.

Reluctantly, we left this glory and swamp slogged (sometimes to our boot tops) down to the lake's edge through Pedicularis groenlandica, Tofieldia glutinosa var. brevistyla and Aconitum columbianum var. howellii (still in bud).

Trip Report by Trip Leader
Charlene Simpson

Field Trip Report, Emerald Chapter NPSO



Lane County Coast Dunes and Wet Places, August 15, 1981.

Three Eugeneans from the Emerald Chapter traveled to the coast to meet trip leader Margaret Markeley of Florence. We proceeded by car to Siltcoos outlet and Wax-Myrtle Campground. By trail, then beach walking, dunes hiking, thicket bushwacking and swamp slogging, we were introduced to some 40 species of flowering plants and 6 species of birds (Dowitchers, Sandpipers, Coromorants, Mergansers, Gulls, and Great Blue Herons). We were amazed at the floral abundance to be seen this late in the summer.

Along the beach:

Mimulus guttatus subsp. litoralis, Grindelia integrifolia var. macrophylla, Trifolium wormskjoldii, Lupinus litoralis, Lathyrus japonicus, Potentilla pacifica, Cakile edentula, Cakile maritima, Rumex maritima var. ferugineus, Honkenya peploides, Polygonum amphibium, Tanacetum camphoratum, Cotula coronopifolia, Fragaria chiloensis, and more.

In wet deflation plains, behind the foredunes:

Ranunculus flammula, Sisyrinchium californicum, Spiranthes remanzoffiana, Lotus corniculatus, Hypochaeris radicata, Botrychium multifidum subsp. silaifolium (what an exciting surprise), Hypericum anagalloides, Centaurium umbellatum, Aster ciliensis and the beautiful, tall blue Gentiana sceptrum (the day's highlight).

In the brush thickets:

Vaccinium ovatum, Gaultheria shallon, Arctostaphylos uva-ursi, Salix hookeriana, Baccaris pilularis (in bud), Myrica californica, Pinus contorta, Lonicera involucrata, and Cytisus scoparius.

And in a very wet place:

Cicuta douglasii. After much consultation and keying through the Family Umbelliferae we reached consensus on identification and all wanted to wash our hands after handling it.

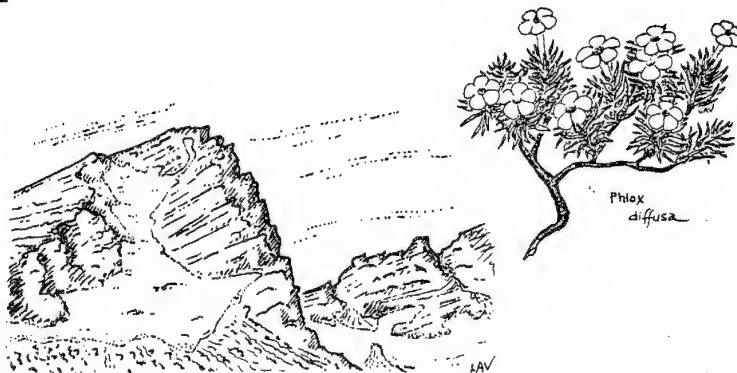
After our delightful 4 mile field trip, under overcast skies with mild temperatures, we drove back to Margaret's home in Florence overlooking Siuslaw Bay for lemonade and



cookies. We engaged in further "homework" to confirm sightings by referring to the 5 Vol. Flora by Hitchcock, et. al.

Field Guide used was: Wiedemann, Dennis and Smith, Plants of the Oregon Coastal Dunes, OSU Bookstore, Corvallis, OR., 1969.

Trip Report by Charlene Simpson



PORTLAND CHAPTER

Meeting:

Tuesday, September 8, 7:00 p.m. Central Library, 801 S.W. 10th, Portland. Timberline Trail Around Mount Hood. The program will be presented by Glen Walthall, Botanist, photographer, naturalist and biology teacher. Glen has been a member of NPSO for many years.

Field Trips:

Saturday, 5 September, 1981. Labor Day. No trip scheduled.

Saturday, 12 September, 1981. Breitenbush/Papoose Lakes Area - Wilbur Bluhm, leader. Carpool at Handyman/Tri-Met Park and Ride Lot (15550 SE McLaughlin Blvd.) in Oak Grove at 7:30. Take Highway 224 to Estacada, Ripplebrook (note: in the National Forest this road may be designated No. 46), and across 6-8 miles of rough road to a junction with S-42. Wilbur will meet us there. This is a very easy 4 mile round trip hike through at least three distinct plant communities; wet mountain meadow, open subalpine forest and dry scree. Wilbur expects to see Gentiana calycosa, Microseris borealis, Gaultheria humifusa plus emerging fall color on the huckleberries and mountain ash. This is not a trip to miss!

Saturday, 19 September, 1981. Elk Meadows - Florence Ebeling, leader. Carpool at State Motor Vehicles Department parking lot (NE 60th and Glisan) at 7:30 or Heidi's, at 8:00 a.m.

"This area of Mt. Hood is truly a hiker's paradise with rushing streams, waterfalls, and European-type alpine vistas of broken glaciers and deep canyons . . ." 100 Oregon Hiking Trails by Don and Roberta Lowe.

You may want to continue past the meadows to spectacular Gnarli Ridge.

Saturday, 26 September, 1981. A Day in Indian Heaven - Elizabeth Handler, leader. Carpool at State Motor Vehicles Department parking lot (address above) at 8:00 a.m. This short hike begins at the top of Red Mountain and descends to the Racetrack. This area is rich in Indian history and culture. Myrtle Overbaugh, long time resident of Klickitat County and former liaison between the Yakima and Klickitat Indian Nations and the U.S. Army Corps of Engineers will discuss the importance of this subalpine meadowland to the Indians.

continued on next page

Saturday, 3 October, 1981. Cape Lookout - George Lewis, leader. Carpool at OMSI at 8:00 a.m. or meet at the trailhead at 10:00 a.m. This is a late season hike through alternating tunnel-like forest and broad ocean views from precipitous cliffs. This is our last coast trip of the season. Don't miss it!

Saturday, 10 October, 1981. Little Crater Lake/Timothy Lake - Charlene Holzwarth, leader. Carpool at State Motor Vehicles Department parking lot (address above) at 8:00, or Government Camp at 9:00 a.m. This late season hike is along a flat portion of the Pacific Crest Trail between Little Crater and Timothy Lakes. Charlene will discuss the geologic forces which have formed Little Crater Lake. Prepare for a frosty morning. Bring mittens and wool clothes. The weather can be unpredictable at this time of year.

HIGH DESERT CHAPTER

The High Desert Chapter will meet at a new location. The next regular meeting will be held September 1, Tuesday, at 7:30 at Cascade Natural Gas Company. The program will be identification of flower slides. Members are encouraged to bring slides of flowers they have not been able to identify.

WILLAMETTE VALLEY CHAPTER

Meeting:

Monday, September 21. First Methodist Church, State & Church Streets, Salem, 7:30 p.m. Program: Native Alliums by Cal Burt. Also: plant sale of native plants grown by members, seeds of natives.

Field Trip:

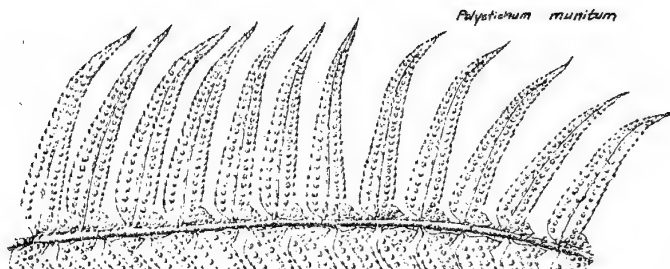
Saturday, September 26. Rescheduled. Dwarf Mistletoe with Peter Paquet. Margo Wing, leader (370-7350). Meet at the north end of the parking lot of south Salem K-Mart at 8:00 a.m.

RARE PLANT PUBLICATIONS

Endangered, Threatened and Sensitive Plants of Washington. April 1981. Washington Natural Heritage Program. 3111 Seminar Building (SE3109). The Evergreen State College. Olympia, Washington, 98505. 26 pp. This publication is a list of rare Washington plant species, including a description of basis for inclusion and species lists organized by the status of Endangered, Threatened, or Sensitive. It also includes a list of plant taxa possibly extinct or extirpated in Washington and a Monitor list. The list is to be followed by a more complete book on the Washington rare plants. The list is available upon request to the WNHP with the inclusion of four first class postage stamps (\$0.72)

Threatened and Endangered Plants of Oregon. An Illustrated Guide. In Press. Bob Meinke. U. S. Fish and Wildlife Service, Endangered Species Office. Portland, Oregon. This publication of Oregon rare plant taxa will be available in the near future. When available, this Bulletin will print how to obtain a copy.

LAV



GATHERING FERN SPORES

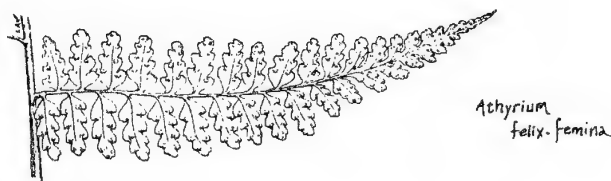
Ferns can be grown from spores just like flowering plants can be grown from seeds. People often have the notion that this is a difficult process and never try. Although not as easy as many flowering plants, ferns are no more difficult than growing begonias from seeds, and are certainly easier than raising orchids from seeds.

The first step in the process, gathering spores, is the easiest. The only trick is finding fertile fern fronds at the right stage, when the spores are mature but not yet shed from their sporangia. This can be determined readily with a hand lens, but requires a little experience to distinguish unopened sporangia from empty ones. The simplest advice is to suggest that a person make several collections at approximately the proper season. A goodly fraction of the collections thus made will turn out to have ample spores for growing. In the Pacific Northwest, August and September are the best months of the year for most ferns. The common licorice fern (Polypodium glycyrrhiza) is one of the few which does not have good spores at this time.

Tips of fertile fronds with many sori (clusters of sporangia) should be picked off and immediately placed in plain letter envelopes. Write the locality data and date on the envelope. If one removes less than a quarter of the leaf area from any one plant, no damage to natural populations will result. The envelopes should be sealed, seams covered with tape if pure samples are desired, and placed in a dry place with good air circulation. After a week or so, tap the bottom edge of the envelope on a table top to get the spores in the bottom. Carefully cut off the top edge of the envelope with a pair of scissors and lift out the frond tips with forceps. There will be a fine yellow, brown or black powder (the spores!) in the bottom crease of the envelope if the ferns were at the proper stage. Cut off one end of the envelope, form it into a trough, and pour (with careful tapping) the spores into a vial for storage. The frond tips can be replaced in the envelope with collection data as vouchers.

(NEXT TIME--SOWING AND GROWING)

David Wagner, Eugene



PLANT FAMILY PROFILES

By Herm Fitz

The Violaceae - VIOLET FAMILY

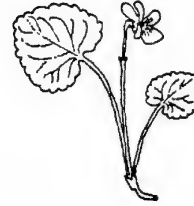
The Violet Family is a small family of 22 genera and about 900 species, cosmopolitan in distribution, but more typical of the Temperate Zone. Representatives occur in the Tropics, but are restricted to mountainous areas there. We are most familiar with our single genus *Viola*, the violets, of which there are 27 species in Oregon.

Members of this family are mostly perennial herbs and shrubs with simple alternate leaves that bear small stipules at the base. The flowers are in racemes or solitary. Most members of this family have regular (actinomorphic) flowers, except the genus *Viola*, which is unusual in that it has an irregular (zygomorphic) corolla. The flowers are bisexual, with 5 sepals, 5 petals, 5 stamens and a pistil of 3 carpels. The petals are unequal, the lower being the largest, and together with the two adjacent petals, form a "landing field" for the pollinators, complete with "nectar guides," or delicately pencilled purplish or brown lines that converge at the central point - incitating to the pollinating insect the source of nectar within the spur. Of course, in probing toward this source, the insect body must touch the stigma, thus depositing pollen from a previously-visited flower, and in backing out, must touch the spurs of the anthers, stimulating a shower of pollen on the back that will be carried to the next flower.

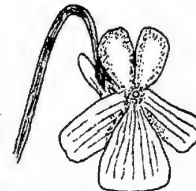
The 5 stamens have their filaments fused at the base to form a ring around the ovary, which is superior, of 3 carpels, fused into a single locule with three parietal placentae. The style and stigma are simple.

Many species of *Viola* have small "cleistogamous" flowers which never open and are self-pollinated. Following pollination the ovary matures to a capsule which often dehisces violently, throwing its many seeds some distance.

Many violets and pansies are cultivated ornamentals, in addition to those natives that occur in woods, meadows, hillsides or bogs. One species, *Viola odorata*, is grown in southern France for essential oils that are used in manufacturing perfumes, flavorings, toiletries and a liqueur *parfait amour*, very sweet and violet-colored.



Viola sempervirens (Evergreen Violet) plant. Note the nodding solitary flower, the simple cordate leaves.

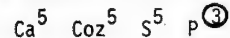


Flower of *Viola sempervirens*, showing the zygomorphic corolla of 5 petals, the striking nectar guides on the lower three petals, and the spur formed by the lower petals, which bears nectar to attract insect pollinators



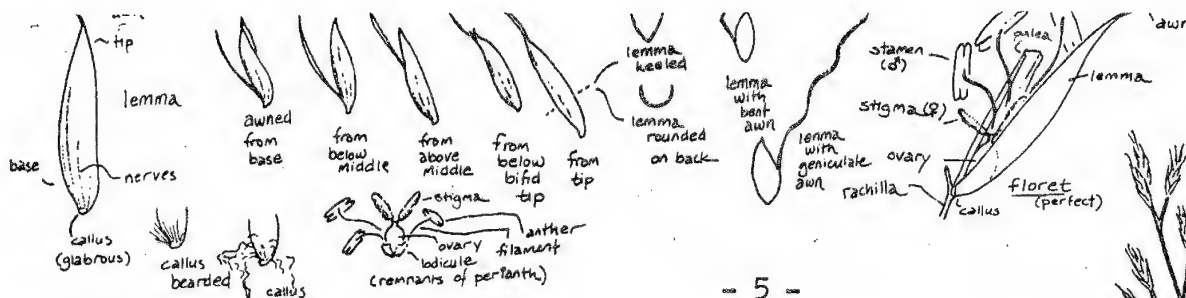
Cross section of ovary of *Viola* species. Note the trilocular condition, with a single locule and three parietal placentae.

We may write the generalized floral formula for the Violaceae (*Viola*):



When you encounter a small herbaceous plant with simple leaves, small stipules, nodding, saccate zygomorphic flowers with prominent nectar guides on the lower petals - and if the ovary is trilocular, unilocular with three parietal placentae - there can be little doubt that you have chanced upon some member of the Violaceae - the Violet Family.

(Note to readers: I am resuming my monthly column Plant Family Profiles after a three month layoff. With the close of a busy sabbatical leave, during which time it was nearly impossible to find regular times to write, I expect to be able to resume a normal schedule. I am sorry for the gap. Herm Herm)



- 5 -

Grass Scholar's Verse

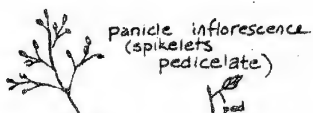
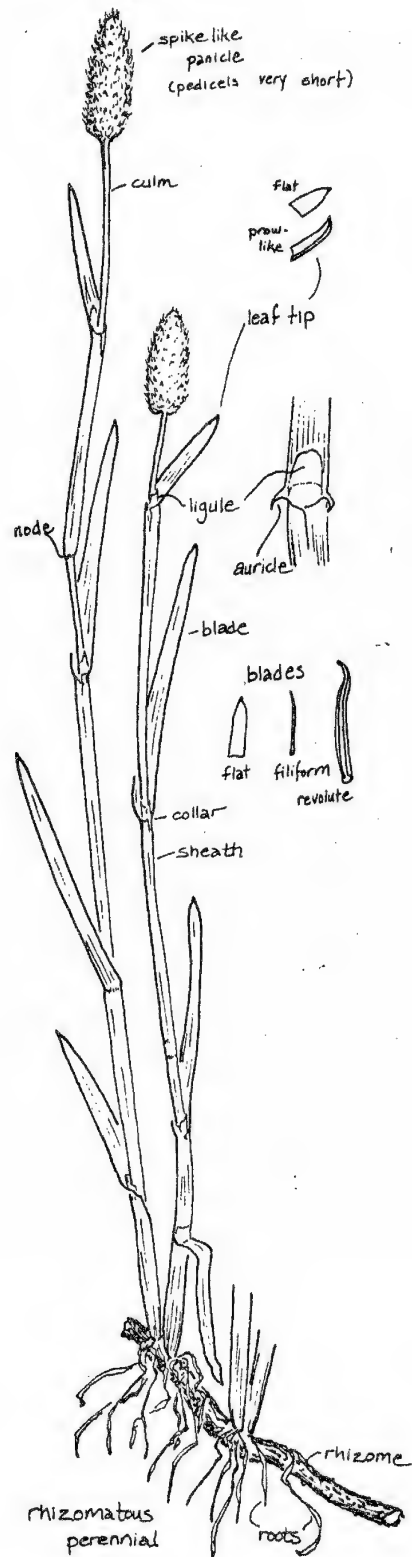
In the January-March issue of the Colorado Native Plant Society Newsletter, the recent death of Dr. Harold D. Harrington, 1908 to 1981, Professor Emeritus in the Department of Botany and Plant Pathology at Colorado State University, is reported. He is the author of *A Manual of the Plants of Colorado* (1954) and other works on Colorado plants.

His last work was *How to Identify Grasses and Grass-like Plants* (1977), in the introduction of which there appeared the following poem written by him. Because of *Fremontia's* recent grass issue, it seems appropriate to quote it in full:

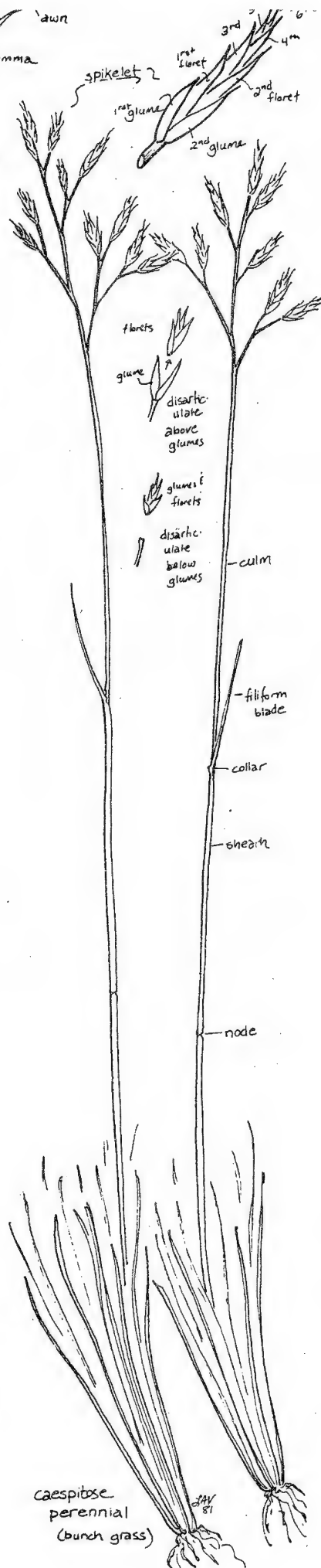
THE IDENTIFICATION OF GRASSES

A grass can be "glumey" in more ways than one,
When its classification remains to be done;
You pull off the parts, and soon feel your age
Chasing them over the microscope stage!
You peer through the lenses at all of the bracts
And hope your decisions agree with the facts;
While your oculist chortles with avid delight
As you strain both your eyes in the dim table light.
You are left on the horns of quite a dilemma
When you count the nerves on the back of the lemma;
Then you really get snooty and turn each one turtle
To see if the flower is sterile or fertile.
And then the compression, no problem is meaner —
Is it flat like your wallet or round like a wiener?
"How simple," you think "for a mind that is keen" —
But what do you do when it's half-way between?
You probe and you guess how the florets will shatter,
For you know later on it is certain to matter;
You long for the calmness of labor that's manual
When the question arises — "perennial" or "annual"?
And that terrible texture, the meanest of all,
Is one of the pitfalls in which you can fall;
"Cartilaginous" maybe — or is it "chartaceous"?
Has even the experts exclaiming "Good gracious!"
Then you wail as you wade through the long tribal key,
"Oh, why must this awful thing happen to me?"
"Grasses are easy," our teacher declares,
As he mops off a brow that is crowned with gray hairs!

[from *Fremontia*, July 1981, p. 25,
"Notes and Comments"]



fibrous roots annuals



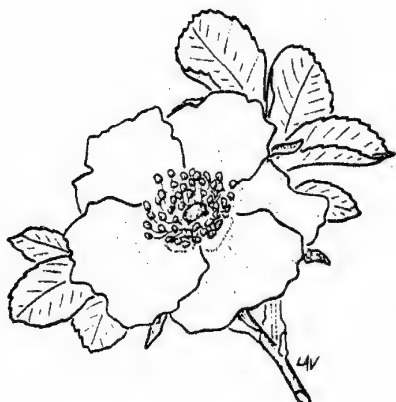


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The Editor
Native Plant Society of Oregon
Department of Biology
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Eugene, Oregon 97403

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Contributions to the NPSO BULLETIN or non-delivery notice should be sent to the editor. Others are welcome to use material from the NPSO BULLETIN. Courtesy pleads, however, that credit be given to the author and to the BULLETIN. Copy deadline is the 15th of each month.



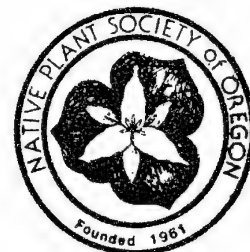
Rosa nutkana Presl
L.A. Varobik © 1981

NATIVE PLANT SOCIETY OF OREGON

☐ Application for membership

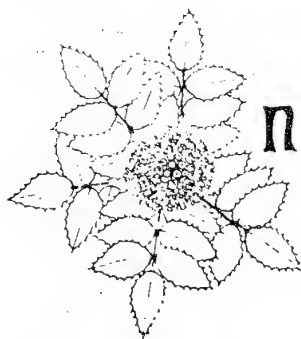
☐ Address change

<input type="radio"/> Student	5.00
<input type="radio"/> Regular member	7.50
<input type="radio"/> Sustaining member	25.00
<input type="radio"/> Patron	100.00
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THE BULLETIN OF THE NATIVE PLANT SOCIETY of OREGON

• OBJECTIVE •

To increase the knowledge of members and public in identification and conservation of the native plants of the Pacific Northwest.

Vol. XIV No. 10

OCTOBER 1981

CHAPTER NEWS

EMERALD CHAPTER

Meetings:

Monday, October 5. Mayflower Miscogenation or "Oh, Those Hybrid Hawthorns!" It is becoming apparent that where hawthorn species come together, hybridization will occur. This has happened in certain locations in the Willamette Valley where our native Black Hawthorn, Crataegus douglasii, grows in close association with the introduced red-fruited English Hawthorn or Mayflower, C. monogyna. Rhoda Love, Emerald Chapter member, will show slides of the two hawthorn species and their inter-specific hybrids and explain where to find the hybrids and how to recognize them. Meet at 7:15 p.m., Eugene City Library.

Monday, November 2. Alan Curtis, Emerald Chapter member and BLM botanist, will show slides of the native plants of the Islands of Maui and Hawaii. We'll be introduced to some flowering plants and trees that the average person doesn't ever get to see. A highlight of Alan's trip, taken in July 1981 with his wife, Mary Ann, was a 14 mile hike to the second wettest spot on earth -- 400" of rain annually! Meet at 7:15 p.m., Eugene City Library.

HIGH DESERT CHAPTER

STEENS MT. TRIP

On the weekend of July 11th and 12th, nineteen members and friends of the High Desert Chapter travelled to Steens Mountain. The weather cooperated, giving us blue sky and sunshine for the entire weekend.

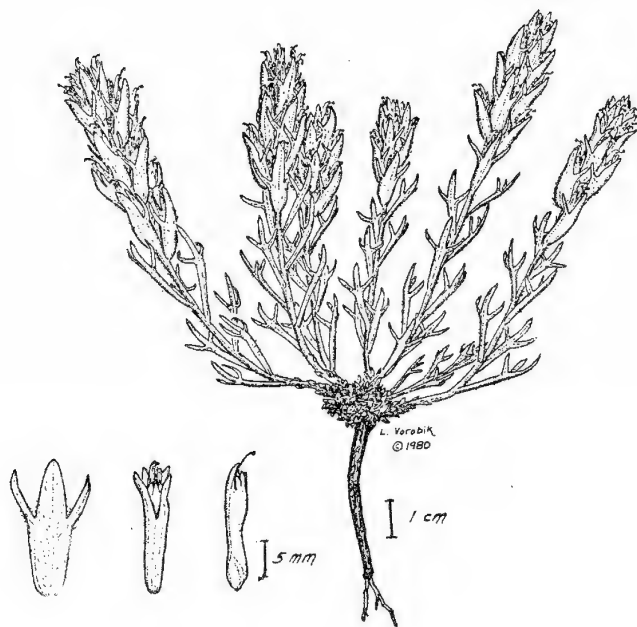
Base camp was at Fish Lake. Saturday morning the early arrivals explored and photographed flora and scenery up to the Alvord Desert viewpoint on the East rim at the 9500 foot level. On Sunday, Joan Price and Carolyn Wright, field botanists for the BLM Office in Burns, joined the group. Their knowledge of the vegetation and ability to quickly identify specimens added a special dimension to the trip. We owe a great deal of success of the field trip to their expertise. We would like to thank them again for joining us.

The bloom was past prime around Fish Lake but there were many lovely displays higher up the mountain. Among the sixty five plus (Christy Steck's count) species tabulated, Helenium hoopseii, Orange Sneezeweed, was the dominant species. Linanthus nuttallii was everywhere and Phacelia sericea, Silky Phacelia, was especially lovely. Showy Penstemon, Penstemon speciosus, had an abundant bloom and the Snow Buttercup, Ranunculus eschscholtzii, put on a spectacular show in a borrow pit above Jackman Park. At the head of Little Blitzen Canyon Showy Polemonium, Polemonium pulcherrimum, both blue and white, were in full bloom and the rocky slope was covered with the many varied hues -- from green to rosy pink -- of the little Steens Mountain paintbrush, Castilleja steenensis.

Dwarf Buckwheat, Eriogonum ovalifolium, Ivesia gordonii, Spraguea umbellata, and Astragalus whitneyi, were abundant at the head of Kiger Canyon and at the East Rim Viewpoint. Marsh Marigold, Caltha leptosepala Cusick's Draba, Draba sphaeroides, were among the species we saw as we dropped down into the head of Indian Creek Canyon on the South leg of the loop road.

These are just a sampling of the many common and some rare plants that were in flower. It was agreed that instead of two days we needed several weeks on Steens Mountain.

Barbara J. Robinson



Castilleja steenensis

PORTLAND CHAPTER

Field Trips:

Saturday, 3 October, 1981. Cape Lookout. George Lewis, leader. Carpool at OMSI at 8:00 a.m., or meet at the trailhead at 10:00 a.m. This is a late season hike through alternating tunnel-like forest and broad ocean views from precipitous cliffs. This is our last coast trip of the season. Don't miss it!

Saturday, 10 October, 1981. Little Crater Lake/Timothy Lake. Charlene Holzwarth, leader. Carpool at State Motor Vehicles Department parking lot. (NE 60th and Glisan) at 8:00 a.m. or Government Camp at 9:00 a.m. This late season hike is along a flat portion of the Pacific Crest Trail between Little Crater and Timothy Lakes. Charlene will discuss the geologic forces which have formed Little Crater Lake. Prepare for a frosty morning. Bring mittens and wool clothes. The weather can be unpredictable at this time of the year.

Tuesday, October 13, 1981, 7:00 p.m. Central Library, 801 S.W. 10th, Portland. Flowers of the Southwest. This program to be presented by Esther Kennedy, long time N.P.S.O. member, botanist and photographer.

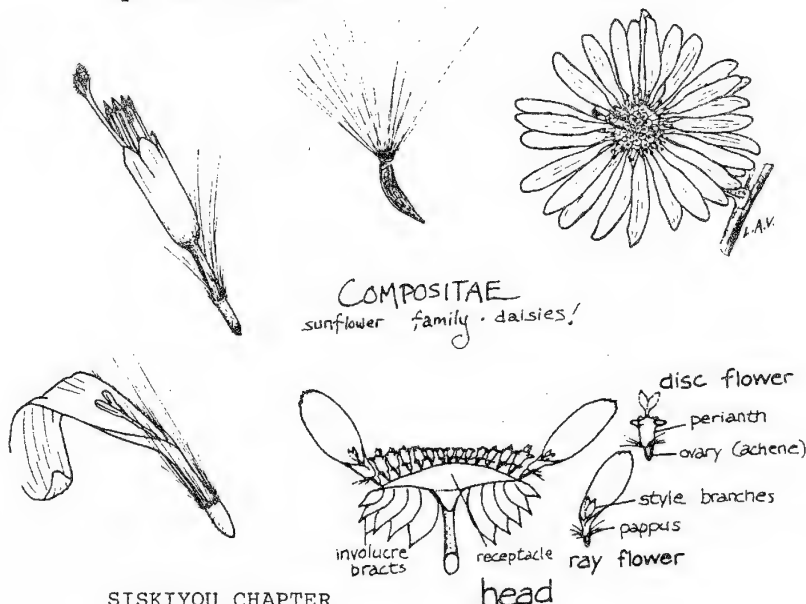
Saturday, 17 October, 1981. Leach Park, George Lewis, leader. Meet at Leach Park at 10:00 a.m. The park can be reached by taking Foster Road to SE 122nd, turning south and proceeding to a bridge over Johnson Creek. The gate is on the north side of the creek. The park is part of the estate left by Mr. and Mrs. Leach. Mrs. Leach is probably best known for her discovery of *Kalmiopsis leachiana*, in the Siskiyou Mountains. The Leachs collected many species of plants, including over 100 different types of trees, and started this garden/park in the 1930's. For over a year now, George has nearly singlehandedly maintained this park. Last Spring, he was nominated by the Portland Parks Bureau as Park Volunteer of the Year.

Saturday, 24 October, 1981. Meadowcroft Memorial Nature Trail. Leader undesignated. Carpool at Tri-Met Park and Ride (9750 SW Barbur Blvd.) at 11:30 a.m. Drive south on I-5 to Salem's Market Street exit, drive through Salem, cross the bridge over the Willamette River and turn right onto Wallace Road. Continue 2.1 miles on Wallace Road until a left turn on Brush College Road. Proceed 4.8 miles to an intersection where you must make a sharp left turn into what looks to be a driveway. Follow signs to 4-H Center. Lost? Call 581-6696, and tell them you're trying to find the 4-H Center. The Meadowcroft Trail has just been completed and will be dedicated at 1:00 p.m. The first official hike will begin shortly after the ceremony. It was built by the Salem Audubon Society and the Willamette Chapter of the Native Plant Society. It is a 1½ hour self-guiding nature trail which passes through a variety of plant communities, including an Oregon White Oak forest. This will be a proud moment for our Willamette Chapter. Come and add your congratulations!

Saturday, 31 October, 1981. Haag Lake. Glenn Walthall, leader. Carpool at south end of K-Mart parking lot at intersection of Murray Road and Tualatin Valley Highway (across the street from St. Mary's Academy) at 8:30 a.m. Join Glenn for this pre-winter walk along a level 1 mile trail to Haag Lake.

Saturday, 7 November, 1981. No trip scheduled.

Saturday, 14 November, 1981. Last Field Trip of the Year! Tryon Creek State Park. Charlene Holzwarth, leader. Take Terwilliger exit on I-5 and turn east on Terwilliger. Turn right at "Y" and follow signs to State Park. Meet at 10:00 a.m. Bring boots, rain gear, lunch and "Winter Twigs of Tryon Park" by Jean Siddall



COMPOSITAE
sunflower family - daisies!

SISKIYOU CHAPTER

Meetings:

October 1., Thursday. 275 Science Building, SOSC, 7:30 p.m. Topic to be announced.

November 5, Thursday, Science Building, SOSC, 7:30 p.m. Relationships between Soil and Vegetation in the Southern Oregon Mountains, by Sue Blumenthal, Soil Scientist.

December 3, Thursday. Science Building, SOSC, 7:30 p.m. Natural Dyeing with Local Plants, by Carolyn Steiber, weaver.

Field Trip:

Sunday, October 4th. Andy Kier will lead a trip to the Applegate River area to see unique tree and shrub species such as Oracle Oak, Baker's Cypress, and Brewer's Spruce. We should catch the beginnings of fall color too. Bring a lunch. Carpools meet at Ashland Bi-Mart at 9:00 a.m., and Medford K-Mart at 9:30 a.m.

SUMMER ACTIVITIES - 1981

Some of the Siskiyou Chapter's activities this season have been at the request of governmental agencies. For example, in June chapter members organized a survey expedition -- a la Lewis and Clark -- to locate and blaze a loop trail through the Miller Lake Botanical Area on the Applegate Ranger District. The proposed route winds through old growth fir stands, with many saprophytes and other shade-loving plants, then opens up to stands of Baker's cypress and oracle oak. Seen on nearby rock faces were *Lewisia leana*, a mysterious Allium, Sedums, and other crevice-types. Some members were concerned as to the advisability of a trail through this delicate and unusual habitat.

continued on next page

Elsewhere, a team led by Frank Sesock surveyed a proposed US Forest Service timber sale area near Observation Peak. Probability of landslides, erosion, windthrow of remaining timber, and reforestation failure were discussed. Calochortus nudus is found along a nearby section of the Pacific Crest Trail. The general area, including Dutchman's Peak, is widely known for its unusual flora. It was recommended that the Forest Service contract out intensive botanical surveys on all such timber sales.

Monitoring of tree conditions in Ashland City Parks has been an ongoing cooperative effort of Siskiyou Chapter members and the Jackson County Extension Service Master Gardener Program. Hazardous tree conditions have been noted and mapped, and an action plan has been submitted to the Ashland Parks Department.

Andy Kier

HELP NEEDED IN ASHLAND

In May of last year, the Rainbow Bridge acquired a small parcel of land from the City of Ashland, as a stewardship. This land had been donated to the city by the Lord family as a passive park. Since it was lovingly referred to by the group as "The Lord's Garden," the city did not quite know what to do with it. Consequently, Rainbow Bridge as a group put forward a suggestion:

To renovate the existing orchard area; to plant an arboretum of Oregon trees and other native "species"; to renovate the woodland walk along the small creek; and, to tidy the play area for public use. Also, there are Trilliums in the wooded walk, and once this is cleared properly, a catwalk could be put in to prevent impaction of the soil, and then possibly an area could be corded off for the planting of endangered species.

Manpower is what is needed mostly for the accomplishment of this purpose, and enthusiastic support. Those with time and energy to help create this park should contact:

Sylvia Schechter
117 Nob Hill
Ashland, Oregon 97520
482-0552

representing Rainbow Bridge and S.O.L.L.A.
(Southern Oregon Living Lightly Association).

WILLAMETTE VALLEY CHAPTER

Meeting: November 16. See next Bulletin.

Special Event:

Saturday, October 24, 1:00 p.m. Dedication and opening of Meadowcroft Memorial Nature Trail, 4-H Center, Eola Hills, West Salem. A cooperative community service project with Salem Audubon Society. Meet at trailhead at 4-H parking lot for a morning of birding at the same place at 8:00 a.m., with a bag lunch. Leaders: Carl Snyder (364-2431) and Judith Armstrong (581-3133).

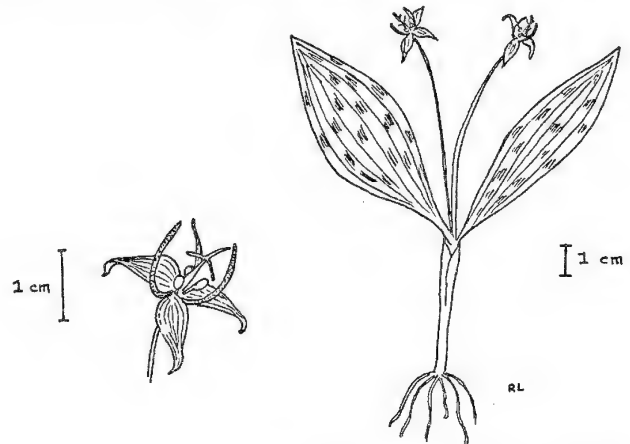
The Mt. Hood mushroom field trip originally scheduled for October 24 will be rescheduled on a date to be announced.

Trillium, Vancouveria, Scoliopus, and other Oregon Genera Have Seeds Dispersed by Ants.

In seed dispersal season, the ecologist may turn his attention to those plants whose seeds are adapted to transport by animals. Many examples come to mind, however, you probably have not: picked Asarum seeds out of your dog's coat; pulled Trillium seeds from your hiking socks, or found Vancouveria seeds germinating beneath a power line where birds habitually perch. This is because members of these three genera and some other Oregon plants, although their seeds are adapted to animal dissemination, belong to the group of plants called myrmecochores; that is, those plants whose seeds are disseminated by ants.

It has been known since the beginning of the century that certain plants have a syndrome of characteristics which make their seeds both available to and attractive to ants. Stebbins, in his Flowering Plants (Belknap Press, 1974), reviews the syndrome which includes: prostrate or recurved stems which bring the seed pods close to the ground; irregular opening of the fruits which makes the seeds available over a span of time; and seeds equipped with an aril or elaiosome of oily material to act as food for the ants.

Rolf Y. Berg, of the Botanical Garden of the University of Oslo, has written a half dozen interesting papers since 1954 describing the effectiveness of these adaptations in a number of plant species, several of which are Oregon natives. (Dr. Berg's papers on myrmecochory are all listed in the bibliography of his very interesting 1972 paper on Vancouveria in the American Journal of Botany 59:109-122, which also describes his experimental techniques. These, in my opinion, could easily be duplicated by high school or college students.)



Stink pod or fetid adder's tongue
(Scoliopus hallii Wats.)

Some of the native Oregon genera which are known to have ant-disseminated seeds are: Trillium, Nemophila, Vancouveria, Scoliopus, Asarum, and Dicentra. All have seeds with a large and obvious oily attachment, variously called an elaiosome, a cucullus, or an aril. These can easily be seen with the naked eye or with a hand lens. The seeds of Nemophila are well illustrated in Hitchcock et al. (1959) Vol. 4, p. 156. The ants apparently carry the seeds to their nests where they eat the fat body but leave the seed itself undamaged.

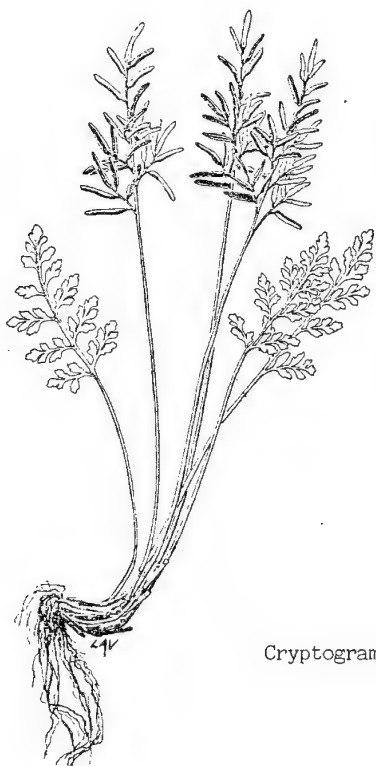
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ECOLOGICAL NOTES, continued

Two of the Oregon *Vancouveria*, *V. chrysantha* (a Siskiyou serpentine endemic), and *V. planipetala*, are on the Oregon R & E list. *Scolioopus hallii*, a very rare lily, is on the Oregon R & E Review List; the rest are less rare, but are generally found in relatively undisturbed places as would be expected of species with a close relationship with other organisms -- in this case, active ant colonies.

Other plants with this adaptation will, no doubt, be discovered through close scrutiny of seeds and ant behavior. One interesting question occurs to me: Why do the ants carry off the entire seed rather than removing and transporting only the fatty body?

Rhoda Love



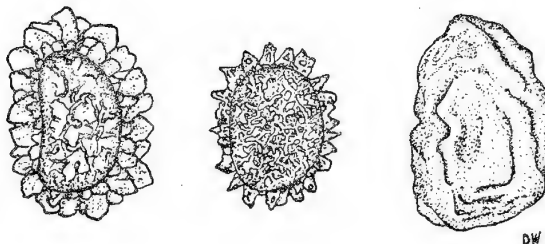
Cryptogramma crispa

GROWING FERNS FROM SPORES

Last month I described the procedures for collecting fern spores. Now that you have some spores in a vial, or at least collecting envelopes, it is time for sowing the spores. The thing to remember here is that the spores are tiny. Almost all fern spores are 50 microns or less in total length, or ca. two thousandths of an inch. It is almost impossible to handle them individually, so the problem is to keep from having too many in your sowing. The simplest method is to dip the tip of a flat toothpick into your spore sample and carry only what will fit on the last half-millimeter of the toothpick. Tap this onto a sheet of smooth, white paper about the size of a 3 x 5 index card. Then tap the underside of the paper to spread the spores out a bit. This needs to be done in a place with still air, or the breeze will carry the spores away. Now, you are ready to invert the paper and drop the spores onto--what?

SPORES OF *POLYSTICHUM* (not to scale)

Left: *P. californicum*, Right: *P. lemmonii*
Middle: *P. lonchitis*



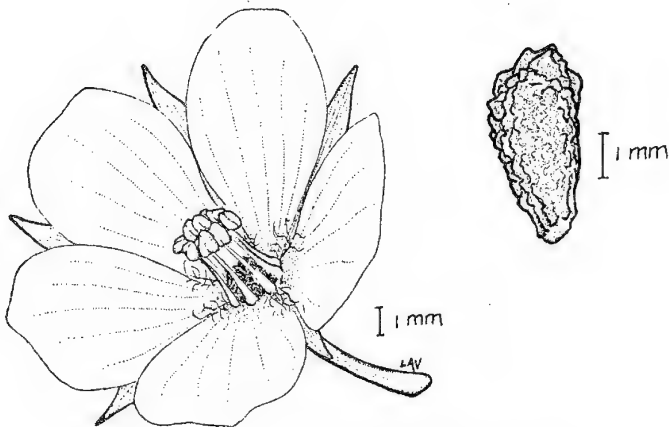
DW

There are probably as many fern growing substrates as there are fern growers. Often a sterile medium is used, such as soil heated in an oven for half an hour, to inhibit the growth of competing fungi. I will recommend the use of expanded Jiffy peat pellets. Use boiling water to expand the pellets as a minimal sterilizing procedure. Then, after the pellet has expanded and cooled, the paper with spores is inverted over the pellet and spores dropped on with a deft flick of the fingers. Put the pellet in a shallow dish and turn a clear glass bottle over the pellet. Place this mini humidity chamber in a window which receives no direct sunlight (sunlight will cause it to overheat in no time at all). Next, the hard part: wait. It will take anywhere from three weeks to six weeks for the little sporelings to develop. These sporelings are merely thin pads of green tissue, only a few cells thick, with the sex organs on them. After the sporelings have reached a size of two or three millimeters, the pellet should be drenched with boiled and cooled (sterile) water to effect fertilization. Note that the pellet should be kept moist throughout this time; if the jar is close to the dish no extra watering is likely to be necessary until the time of the drenching for fertilization. When the water has again dribbled through the pellet, drain off the excess and replace the jar. Once again, it is time to wait. Add water only if the pellet shows signs of drying.

If all is going well, it will take another few weeks for the adult stage of the fern to get large enough to see. This time, instead of a little pad of green tissue, true leaves will grow up into the air. The most tricky part of fern growing comes next: transplanting the little plantlets. When this is done depends on the density of the plantlets on the pellet. If they are very crowded, it must be done sooner. If there are only a dozen or so, let them grow until there are four or five leaves more than an inch high. Cut the peat pellet apart and move the plantlets to individual 2" pots. Keep the soil quite moist, as these little plantlets are very sensitive to drying. If you do not have a greenhouse, keep them under peanut butter jar humidity chambers for a week or two, gradually hardening the plants off in a shady place outdoors. Full-sized adult plants will take another year or three to develop, but the effort in having your own batch of home-grown ferns makes the wait worth it.

GOOD LUCK!

David Wagner, Eugene



Limnanthes floccosa
subsp. *grandiflora*

OREGON CRITICAL AREAS PROGRAM

The Nature Conservancy is interested in preserving endangered species in Oregon. The Oregon Critical Areas Program is an attempt to target, locate and preserve critically threatened species and ecosystems. One of our more difficult tasks has been identifying those rare plants which require immediate TNC action to prevent their disappearance. The plant species to be considered are those which are rare and which have current threats to their remaining habitat. We are limiting our scope to species with ranges primarily restricted to Oregon, and which occur on private lands. In 1981, ten species were targeted for research and possible action. Only one of the species, *Limnanthes gracilis* var. *gracilis*, apparently did not belong on the list.

In 1982, this program is to be continued. Following are two lists. The first lists species which are currently receiving TNC attention. The second lists species to be added in 1982. Any input on the species to be listed in 1982 would be extremely helpful, especially in regard to site locations. If areas have been unsuccessfully searched for some of these species, or if any locations which are high quality natural areas are known, please notify us. Information can be sent to:

Jimmy Kagan
Oregon Critical Areas Program
The Nature Conservancy
1234 NW 25th Avenue
Portland, Oregon
(503) 228-9561

These are proposed additions to the OCAP species for survey work in 1982. Possibly extinct plants to be included are:

Plagiobothrys hirtus var. *hirtus*
Pleuropogon oregonus

and possibly:

Astragalus applegatei
Calochortus indecorus
Lomatium nelsonianum
Lupinus cusickii spp. *arborescens*
Plagiobothrys hirtus var. *corallicarpus*
Plagiobothrys lamprocarpus

There are a number of very rare plants which have not been included because they occur on federal lands. However, if we have missed any species which occur on state, city or private lands which you believe are critically threatened, please let us know. Unfortunately, the resources of The Nature Conservancy are limited, so we have to restrict our scope to species which need immediate attention.

Thank you very much for your time and help.

J. Kagan

List 1. OCAP Special Plant Species

1. Current species which have had some TNC research and for which sites have been field checked:

Thelypodium howellii subspecies *spectabilis*
Thelypodium eucosmum
Astragalus tyghensis
Limnanthes floccosa var. *grandiflora*
Perideridia erythrorhiza
Arabis koehleri var. *koehleri*
Astragalus peckii
Limnanthes gracilis var. *gracilis*.

2. The following species are part of current, new or ongoing TNC projects:

Willow Creek
Lomatium bradshawii
Aster curtus
Erigeron decumbens var. *decumbens*

Eight Dollar Mountain
Balsamorhiza sericea sp. nov. ined.
Calochortus howellii
Cypripedium californicum
Darlingtonia californica
Gentiana bisetacea
Lewisia oppositifolia
Lilium volmeri
Microseris howellii
Schoenolirion bracteosum
Senecio hesperis

Leslie Gulch
Mentzelia packardiae
Trifolium owyheense
Senecia ertterae
Ivesia rhypara
Astragalus sterilis

List 2. OCAP Special Plant Species: Proposed 1982 additions:

Artemesia ludoviciana sp. nov. ined.
Astragalus collinus var. *laurentii*

These are OCAP species from 1980 for which sites were not identified as a result of a lack of time, and will be included in the 1982 additions:

Astragalus tweedyi
Castilleja levisecta
Cirsium ciliolatum (at Siskiyou Pass with *Microseris laciniata* spp. *detlingii* and *Calochortus greenii*, if possible)
Collomia macrocalyx
Hackelia cronquistii
Haplopappus radiatus
Lathyrus holochlorus
Sidalcea nelsoniana
Sidalcea setosa

In this issue a special feature is being initiated, the serialization of Louis F. Henderson's autobiography. The source is an unpublished manuscript, the original of which is housed in Special Collections, University of Oregon Library. It is the text of two addresses given in the Portland area sometime in the 1930's (date uncertain). Running over 60 typed pages, it will take a year or more to complete the series. Henderson was born in 1853 and survived the Civil War in the South. (Another lengthy manuscript describes his childhood experiences very dramatically, but is more suitable for historians than botanists.) Of the four most active botanists in Oregon in the late 1800's, Howell, Gorman, Cusick and Henderson, the latter was the most articulate and literate. This manuscript concentrates on botanical matters and should be of interest to all members of the Native Plant Society of Oregon as well as people interested in the history of the Pacific Northwest. The story of the discovery of many of our favorite plants will appear in this series, written in the delightful style of the man who found them. These stories should help humanize the latin names of plants such as *Sidalcea hendersonii*, *Erythronium hendersonii*, *Oryzopsis hendersonii*, or *Phacelia idahoensis* (the latter named by Henderson himself rather than named in his honor). That Henderson was an adventurous character is emphasized by the many brushes with death he relates, and strong by the fact that he swam across the Columbia (before dams!) at the age of 70, to celebrate his 70th birthday.

(preface by Dave Wagner, U. of O. Herbarium)

EARLY EXPERIENCES OF A BOTANIST IN THE NORTHWEST

by L. F. Henderson

During my sophomore year at Cornell University, New York, I was seated on the stone steps of the north building of the three that then formed the University, waiting to see whether I could get any advanced work in Spanish and Italian literature, when along strolled a tall, broad-shouldered man. He stopped and spoke to me, for though a senior in the science department, he belonged to the same college fraternity that I did, which probably accounts for his speaking to a mere sophomore. "What are you doing, -- trying to warm that stone you are sitting on?" "Waiting to see whether I can get any advanced Spanish or Italian", I replied. Said he, "I am just opening a beginning class in Systematic Botany. You like the woods and flowers, and are a great trumper, so why not come over with me this year and learn something about botany?" I readily acceded to his request, and then began for me that study which has filled so much of my life. What creatures of chance we often are! Had not David Starr Jordan, late President of Stanford University, come along just at that time, and been my instructor that year of 1871 and 1872, I might never have known the pleasures that often fill a botanist's heart to overflowing!

During my last two years in college I continued the analysis of plants by myself, since very full junior and senior schedules did not permit of further classroom work. During my senior year in 1874 I was chosen a member of the second Cornell Crew and the first of the two that rowed on Lake Saratoga. I had also been chosen as instructor in a private school in Oakland, California, known as McClure's Military Academy. The race at Saratoga was put off three days on account of bad weather, and after the race had been rowed, I had to start at once for California and my work as a teacher, since the term began eight days after the race! Again the hand of chance! Had not my first position been in California, I might never have come to this coast! As it was, I had another race to get there at the opening of school, for no fast trains moved across the continent at that time. Twenty miles per hour was about the limit, day in and day out, and I reached Oakland the evening before the opening.

I remained in California that year, and the next year, 1875, moved to Oregon with my mother who had joined me, led as both of us were by the fact that my brother had been a resident of this state for several years. The following few years I shall pass over very hastily as they had little to do with my botanical work. To help fill out my very flattened purse, I worked that summer in the harvest field, taught school at Monroe on the Long Tom that winter, went as instructor next year to Albany Collegiate Institute (now college), and at the end of that year moved to Portland, where I resided from 1877 to 1889. In early 1887 I had the pleasure of meeting that charming couple from Hood River, E. L. Smith and his wife, and at their invitation I spent the early summer at their pleasant country home. So charmed were my mother and I at the then unspoiled beauty of Hood River Valley, -- a beauty hardly less now that it is mainly in orchards and cultivated fields, -- that we bought 80 acres of untouched woodland and prairie, and there erected the house which is standing and livable today. We never expected to have any of it in fruit, for scarcely an orchard, and but few cultivated fields, existed in Hood River Valley at that day. No town existed then, nor did it for many years to come. There was no railroad along the Columbia at that early date, nor road, and the only way to reach it was by boat to Cascades, then transfer to a short bit of railroad, and then steamer again to the Dalles. No wonder that I, brought up and having spent half of my years in the wilds, should have delighted in the varied woods and prairies of Hood River with its wonderful flowers, pure air, magnificent scenes, with fine fishing and hunting thrown in to render the place perfect! Our only neighbors within miles were the E. L. Smiths, Lyman Smiths, Barretts, and Stranahans, while in what afterwards became the town lived Dr. Adams and Henry Coe, with their families. I soon found the Barretts, both the Doctor and his cultivated wife, deeply interested in the flora of Hood River, and we soon purchased the only available works that were then published and that would help us any in tracing out the flowers, viz, The Botany of California by Watson, Gray and Brewer,



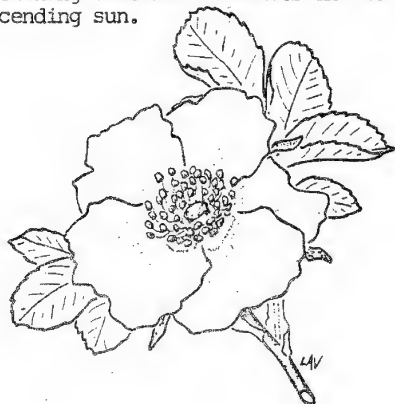
and the Synoptical Flora of North America by Asa Gray. Then Dr. Barrett and I began to scour the valley, where fences were none, and roads were hardly needed, bringing back to their house our armfuls of floral treasures, and where we spent happy days in trying to trace them out, often with success, but often to find them new to these floras.

In 1878 I was visited in Hood River by two of my dear Portland friends now gone, J. R. Stoddard, a lawyer and old Cornell acquaintance, and Dr. William Jones. Together we proceeded on horseback to Trout Lake and the region about Mt. Adams. Not a person then lived within several miles of the lake, or for that matter, anywhere in the Upper White Salmon Valley. Consequently, no stock had yet been pastured in that country, causing the heavy stand of native grass, everywhere present throughout the pine woods, to resemble at a little distance a well kept estate in England or the continent. Deer, bear and game birds were everywhere, and these, together with the hordes of trout or salmon in the streams, made the whole country a perfect paradise. We did not visit Mt. Adams that year, but the next at about the same time, Stoddard, with Avery, then in the tobacco business, and the writer, started again for the mountain. We reached it about the Fourth of July, and consequently found the snow deep and far down its sides. As it was the first time any one of us had visited a snow mountain on foot, we proceeded to show our profound

continued on next page

EARLY EXPERIENCES OF A BOTANIST IN THE NORTHWEST,
continued

ignorance, which in several instances almost led to disaster and death. No one of us had adequate nails or pegs in our shoes, no one of us had a steel-pointed alpinestock. As we knew at that early season, we must attack the mountain from far round to the east in order to reach the top, we proceeded to fill our pockets with small flat stones to mark our way across the snow fields. Unnecessary to say, that those flat stones were so heated by the sun's rays that they had all sunk out of sight before our return 15 hours later! Having got far round to the east and partially up the mountain, we stopped to eat a 10 o'clock lunch in a nice, sunny, warm spot, which looked as though it had been cleared of snow for our special benefit! We had hardly commenced our lunch, our eyes centered on the yellow hills of Eastern Oregon, when suddenly we were surprised by a sound like a jumping deer, and wondered what it was. We were not kept long in suspense, for almost immediately a stone, weighing I should say a ton or more, jumped over our heads (and not into our midst, as it might just as well have done), and went thundering down the mountain. The nice valley we had stopped in was the natural highway for the stones which became loosened from the cliffs above! As we ascended the peak, we seemed driven more and more to the north-east slope of the mountain, till as we approached the top, we had to cut our way for a hundred yards or more with a hatchet, so steep was the gradient and so icy. We afterwards found out we were near the top of the Klikatat Glacier! A few feet further and we were stopped by a fault, or drop in the ice (crevasse) 40 feet high we judged, and extending as far as we could see to right and left. Nothing to do now but face about and go back. So we tied ourselves together with a rope, which we had actually had sense enough to bring along, cursed our thoughtlessness in not providing ourselves with alpine-stocks, and then stepped off, as it were, into space, counting time out loud, and trying to hit with our heels the steps we had cut coming up. We finally got off the glacier in safety, then kept to the right and up, and finally reached the top of Mt. Adams while the sun was an hour high. We thought ourselves then repaid for the sight that met our eyes. The tops of all the great peaks were in view for over 100 miles, but they appeared cutting their way through a close bank of clouds, far below us and shining like molten silver in the rays of the fast descending sun.



Rosa nutkana Presl
L. A. Vorobik © 1981

RENEWAL FORMS
IN NEXT MONTH'S
BULLETIN!

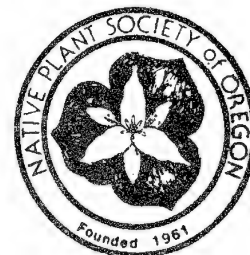
We hurried down the mountain, and then westerly towards camp, which we did not find again till about 10 p.m. By that time our faces were burning from the reflection from the white surfaces, for none of us had known enough about snow mountains to grease and blacken our faces. I have gone to some length to speak of our adventures on Mt. Adams, not that most of our good mountaineers have not had many more hazardous and bitter, but simply to show how foolish it is for tenderfeet in mountain climbing to take such risks, or to attempt ascents without proper equipment, and, most important of all, a good guide. Non-observance of these simple precautions have led recently to many casualties on our snow peaks of Oregon and Washington. Many beautiful plants I saw on these two trips, most of which were new to me, but as we went as lightly equipped as possible, even without adequate bedding, I was able to gather but very few. My work of collecting went on, however, all through the spring and early summer, and I had by this time begun the preparation of an herbarium.

Late in that summer I was invited to join an expedition up to the snowline of Mt. Hood, to see whether it were practicable to construct a road from upper Hood River Valley to the timber line. Unnecessary to say, both road and hotel were afterwards built. We met about a dozen strong, at the farm of Tieman and Baldwin near the present Mt. Hood village. We chose Baldwin as leader and started early the next morning, each man carrying his pack on his back. Six miles or so up the East Fork we left the river, and started as straight as possible for the mountain. As I took no botanical pack on this trip, I shall pass over that frightful day, as we wormed our way through brush, with not a mouthful of food or even a drop of water -- a day which began for us at 3 A.M., and ended on Tilly Jane Creek about 7 P.M! I should end this trip at once, were it not for a thing which befell us that night. When we finally did reach a camping-place, one of our members insisted, against our protests, on setting fire to a thick clump of alpine fir (*Abies lasiocarpa*), to show his people in Hood River that we had arrived. As the wind was beginning to rage, that fire was soon out of bounds, and leaping from clump to clump of the beautiful trees. We went to bed with many misgivings. Some time during the night, someone yelled "Look out in camp!" We automatically sprang up, each man seizing his bedding, and scattered in all directions. Almost immediately a great tree, burned nearly through, fell where we had been lying, as if to repay us for our sacrilege in setting him afire!

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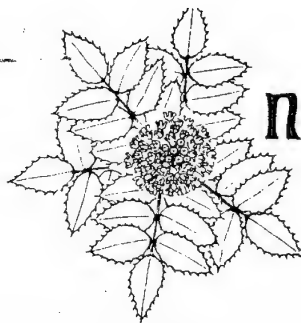
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THE BULLETIN OF THE NATIVE PLANT SOCIETY OF OREGON

• OBJECTIVE •

To increase the knowledge of members and public
in identification and conservation of the native
plants of the Pacific Northwest.

Vol. XIV No. 11

NOVEMBER 1981

CHAPTER NEWS

EMERALD CHAPTER

Meetings:

Monday, November 2. Alan Curtis, BLM botanist and Emerald Chapter member, showed us slides of some rarely seen native plants of the Islands of Hawaii and Maui. Alan, who with his wife Mary Ann, visited in July, hiked to a remote wet area (400" of rain per year!), after obtaining permission from land owners. His pictures were of an area rarely visited by non-Islanders, taken on a beautiful "non-wet" day. We met at the Eugene City Library.

Monday, December 7, 7:15 p.m. In lieu of our regular meeting at the City Library, Emerald NPSOers and guests are invited to a Christmas Social and Gift Bazaar at the home of Rhoda Love, 393 Fulvue Drive (near the Wayne Morse property off Crest Drive). Call 345-6241 if you get lost.

We ask that each coming bring a saleable item of interest to NPSOers. Suggestions: potted plants, seed packets, color photos, books, native plant magazines or monographs, calendars, note cards, dried arrangements, wreaths, mistletoe, hand lenses, maps, metric rulers, etc. Do not wrap the item. Come prepared to price it. If no one offers the minimum price the donor keeps it. All proceeds will go to the Emerald Chapter treasury to help finance the work of the society.

Native Plant Nurseries and Seed Exchanges:

Following Ken Hixson's excellent presentation on native plant propagation at our September meeting, requests were made for a list of native plant nursery catalogues and sources of seed exchange. Ken has compiled a master list which is available for photocopy. [contact Charlene Simpson, c/o EMERALD Chapter.]

Congratulations to a Winner!

Chris Luneski, Emerald Chapter, has received word from Sierra Club Books that his photograph of a lupine was selected for reproduction (or held as an alternate) in the 1983 Sierra Club Calendar.

SISKIYOU CHAPTER

Field Trip:

Sunday, November 8. A tour of the Osborn's November garden in Jacksonville, Lawrence Crocker's garden of alpine plants and other fine places. Suitable for non-hikers. Bring a lunch; we will be back by mid-afternoon. Leader: Jean Danielson. Meet at 10:00 at BiMart in Ashland and 10:30 at K-Mart in Medford.

WILLAMETTE VALLEY CHAPTER

Meeting:

Monday, November 16, 7:30 p.m., First Methodist Church, State and Church Streets. Carrier Room - use Church street entrance. Program - Members' slides of plants and habitats enjoyed on Chapter field trips during the past year. If you have slides to show, please contact Jack Bailey, (394-2414). Also, sale of seed and native plants propagated by members.

PORTLAND CHAPTER

Field Trips:

Saturday, 7 November, 1981. No trip scheduled.

Saturday, 14 November, 1981. Last Field Trip of the Year! Tryon Creek State Park. Charlene Holzwarth, leader. Take Terwilliger exit on I-5 and turn east on Terwilliger. Turn right at "Y" and follow signs to State Park. Meet at 10:00 a.m. Bring boots, rain gear, lunch and "Winter Twigs of Tryon Park", by Jean Siddall.

Meetings:

Thursday, November 19, 7:00 p.m., Central Library, 801 S.W. 10th, Portland. Tyron Creek State Park, A Unique Natural Area Within Our City. The program will be presented by Dave Simpson, Park Director and Naturalist. This is a chance for you to see the park through a slide presentation.

Thursday, December 17, 7:00 p.m., Central Library, 801 S.W. 10th, Portland. Show and Tell. This program will give members a chance to show 5-10 of their most unique slide pictures of flowers taken in the last year. Members wishing to participate, please call Don Barr at 246-2785 so I can schedule time in the program.

HIGH DESERT CHAPTER:

Meeting:

24 November, 1981, held at Cascade Natural Gas. Program to be announced.

Notes: At our meeting on 10/6/81 the Chapter voted to change the meeting date from the 1st Tuesday in each month to the last Tuesday in each month. This will allow for better communication through the newsletter. We will also attempt to hold our meetings at the Cascade Natural Gas Meeting Room, 334 N. E. Hawthorn, Bend, at 7:30 p.m.

At our October meeting, John Schwartz presented slides of conifers of Central Oregon and gave us an erudite discussion of the taxo-

HIGH DESERT CHAPTER, continued

conomic differences. We will look forward to the second part of John's lecture in the Spring which will concern the broadleaf and deciduous trees of our area.

Barbara Robinson and Kathleen Cooper will prepare the final update for the Plant List of the Nature Conservancy's Metolius Preserve. We feel we have added significantly to the previous survey.

S. G. GARRETT



The following are three articles from Anne Kowalishen, Portland Chapter, chairperson for the NPSO Endangered Species Committee. She maintains close contact with government agencies such as the Fish and Wildlife Endangered Species Office, in order to keep the NPSO involved with and informed about protection of Oregon's rare and threatened plants. Thank you Annie, for all your hard work!

TRADING OF PLANTS AND WILDLIFE

This summer there was some good news from Washington, D.C., one bright spot in otherwise gloomy news from our nation's capitol. The Senate, after a hard struggle, passed S. 736, which are amendments to the Lacey Act. These amendments will extend that law's protection to certain plants in interstate or foreign commerce. Generally, these amendments establish penalties for trading wildlife and plants that are restricted by federal and state laws. Penalties are applied when the value of the merchandise is over \$350. The plants that are mostly affected are cacti, succulents, orchids and carnivorous plants. These amendments must go through the House of Representatives still, but the members of the Senate's Committee on Environment and Public Works worked hard for the passage of the Senate bill.

MINING AND THE NPSO

Last spring NPSO's Board of Directors voted to join the Mining Action Coalition, a group of citizens interested in reforming Oregon's mining laws. Oregonians from all over the state have joined in to make Oregon's mining laws more stringent than they have been. NPSO has been interested because mining is a very real threat to many of our threatened and endangered plants.

The good news is that the mining reclamation bill passed our Legislature this summer (old news if you followed our papers closely). The bill applies to new surface mines for coal, nickle and other mineral bearing ores and requires that a realistic reclamation plan be submitted and bonds of up to \$10,000 per acre be posted. Small miners are exempted up to 5000 yd³.

Joe Doyle, who was primarily responsible for getting this legislation passed, commented that several legislators were influenced by a large amount of citizen input. NPSO members might keep this in mind when we renew our efforts to introduce state legislation to protect endangered species.

ENDANGERED SPECIES ACT: INTENTIONS VS. ACTUALITIES

The Endangered Species Act of 1973 and later amendments were passed by Congress to provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved. That law requires the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the Act is no longer necessary. It declares a policy that all Federal agencies shall seek to conserve threatened/endangered species. It supports international efforts in conservation and encourages individual states to the same ends. Underlying the law is a humbleness unusual for mankind. There is no assumption that one species is more important than another. There is no assumption that one particular group is more or less valuable to humans or our biosphere. There is no assumption that one nationality of species is superior to another. Implicit in this law is the concept that all of the biosphere is interconnected and that we are not yet at a point where we can say with understanding "This species is significant, and that one is not."

It is only recently that we have, as a nation, come to value different races, religions, cultures and sexes of our own humankind. So recently have we come to perceive that one group of people are no more or less superior to another, so tenuous a hold does this concept of our relationship to our own kind have in our value system, that it is no wonder that the non-chauvinistic spirit of the Endangered Species Act is having difficulty taking hold. People like mammals better than cold-blooded animals. We are biologically closer to mammals than we are to snakes and spiders, and generally we value them more. Most of us have never seen or heard about the species of wildlife and plants that may soon fade into extinction, so we have no sense of caring for them.

And so it has come about that, by an administrative policy, one group of species has been given a higher value than another. It is now so refined that species are rated on a scale of 1 to 120. The closer the group is to human, the higher the value it receives. U.S. Fish and Wildlife Service, the agency entrusted to carry out the Endangered Species Act, has recently set up such a system. If you examine the priorities it almost appears a list in popularity: Mammals, birds, fish, reptiles, amphibians, vascular plants, insects, molluscs, non-vascular plants and other non-vertebrates. The surprise is that snakes are rated higher than plants, for people generally prefer flowers to snakes.

It would seem that our government has taken a step backward from the proud ideals embodied in the law. Until we all reach the understanding of the interconnectedness of it all, we will not be able to achieve the lofty goals of saving all species from extinction.

The tragedy lies in the fact that there is a time pressure. For by the time we have balanced our budget, by the time we have gone through the ponderous and lengthy process of giving legal protection to the highest priority species, by the time we are able to consider those groups unfortunate enough not to be back-boned animals, they may have gone. And extinction is forever. The loss is irrecoverable. We may never know of our loss. Or we may say "if only we had been wiser."

ECOLOGICAL NOTES

Construction of a Self-Guiding Nature Trail

A self-guiding Nature Trail was constructed at Crest Drive Elementary School in Eugene during the 1980-81 school year.

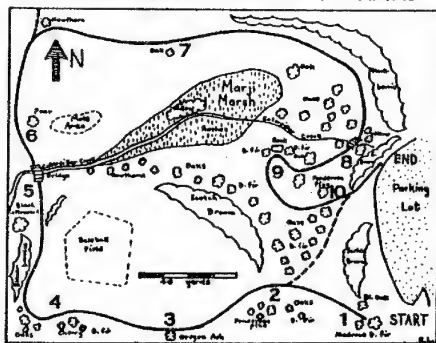
I worked on the trail with a special education teacher and 10 students from grades 4-6. The students and I met for approximately an hour per week starting in October and continuing until trail-opening day in May.

The trail, a one-third mile loop, was constructed on a relatively natural plot of school property adjacent to Crest School in South Eugene. In October, when woody plants still bore leaves, the students and I surveyed the vegetation, collected for herbarium sheets (this was repeated later for the spring-blooming flora), laid out the course of the loop trail, and tentatively established 10 study stations.

We found eleven tree species along the trail route and we set up the stations in such a way that each tree species and its associated ecosystem should be examined closely. Trees present were: Douglas fir, Ponderosa pine, Willow, Black cottonwood, Garry oak, Kellogg oak, Oregon ash, Douglas hawthorn, Cherry, Pear, and Pacific madrone. Each student wrote a "research paper" on one tree species for later inclusion in our self-guiding booklet.

During the winter months I gave the students lessons in ecology and scientific naming, and we visited the trail at least once a month to record seasonal changes. We also worked on mapping the trail area and preparing labels for the plants. Also, we cut and stained 10 numbered wooden posts to mark the 10 stations.

CREST DRIVE NATURE TRAIL



In April we held a Saturday work party day when parents and students turned out to plant the station posts and to spread wood chips along the trail route. (We were lucky to have the chips donated by a Crest School parent.)

Spring-blooming flowers made a spectacular display along the trail in April and May. Some of the most abundant blooms were: Fawn lily, W. Buttercup, Camas, Fritillary, English Daisy, Forget-me-not, Flax, Wild hollyhock, Wild iris, Indian plum, and Lupine. The students made a library display of some of these flowers. For their final written assignment each student described the plants, animals, physical conditions, and ecology of one of the ten stations. These descriptions

(somewhat edited by me) were also included in the booklet. The school secretary did a beautiful job of typing our 32-page booklet and it was duplicated at low cost at the School District office.

On a sunny afternoon in May, the entire school attended the Nature Trail opening ceremonies, and after the ribbon-cutting all the students and teachers walked the trail. Each student in the school was given a copy of the booklet for his/her family.

The trail can now be used year-round by school classes and by community members. The Eugene public schools have virtually lost their formal outdoor program due to district budget cuts. It is hoped that the Crest Drive Nature Trail will help to provide some first-hand nature study for young people and other interested members of our community.

Rhoda Love
Emerald Chapter

SEEDS AVAILABLE

The New England Wild Flower Society is offering this year on a trial basis seeds and spores of over 100 native plants. Members of the New England Wild Flower Society will receive in January, 1982, a list of seeds available, and all orders must be received by March 1982.

Non-members wishing to receive the Seed Sales List should mail a stamped, self-addressed business (#10 size) envelope to: SEED SALES, New England Wild Flower Society, Garden in the Woods, Hemenway Road, Framingham, MA 01701.

NO requests for lists will be honored without the stamped envelope.

BOOK REVIEW

A SYNONYMIZED CHECKLIST OF THE VASCULAR FLORA OF THE UNITED STATES, CANADA AND GREENLAND. VOLUME 11. THE BIOTA OF NORTH AMERICA. John Kartesz and Rosemarie Kartesz, in confederation with Anne H. Lindsey and C. Ritchie Bell. xivii. 500 pp. University of North Carolina Press. 1980. \$35.00

The authors are to be congratulated for this monumental work; in it 56,941 names of taxa are accounted for. In preparing the checklist, the authors consulted specialists for the most up-to-date treatment of some of the genera. The names and professional addresses of these specialists are given, providing a catalogue of currently active monographers.

This checklist is a great help for anyone wishing to know the names of all the taxa that would appear in a traditional floristic treatment, plus the names of the most important synonyms. For instance, recently I obtained a buffalo-berry plant (*Shepherdia*) from a nursery, but they did not know its specific name. When I consulted the checklist, I found there are only three recognized species of *Shepherdia* in this part of North America and by a process of elimination, I was able to identify my plant.

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The checklist is very easy to use because the genera are arranged alphabetically and the species are alphabetical within a genus. In typing up herbarium labels, I found it provides a very quick way to find the author (or authors) of a taxa. However, in doing this, sometimes it has been a shock to find that old friends now have new names. For instance, when I looked up Helenium hoopesii I found it was not listed under Helenium. The index led me to Dugaldia and I found that this plant is now Dugaldia hoopesii [according to the authors].

The book is well proof-read. A two-page list of errata helps correct minor errors that occur in a work of this size. Inevitably, there are some omissions. According to John Kartesz, more than 60 new taxa have been described since the book was published.

Other more definitive reviews can be found in *Brittonia* 32(4):573. 1980, and *Systematic Botany* 6(1):91-93. 1981.

Margaret Williams

From Northern Nevada Native Plant Society Newsletter, October, 1981.



EARLY EXPERIENCES OF A BOTANIST, by L. F. Henderson
continued from October 1981 *Bulletin*

- Section 2 -

In 1880, while spending the summer in Hood River with my mother, as was our yearly custom then, we heard through the Indians of a beautiful lake to the west or northwest of Mt. Hood, and a party was formed to find it. Our grand Hood River pioneer and good companion, E.L. Smith, was the organizer, and soon a party of about ten was assembled for this purpose. We had tried to enlist the services of some mature Indian (for at that time there were many in Hood River) to act as guide; but this attempt fell through, as not an Indian could be found to serve in this capacity. Their statement was that the Devil lived in the lake, or, from others, that the lake was haunted by the spirit of the White Doe -- which legend you can find in writings of that time. We assembled the first night at John Diver's home, the only one in that locality at that time. The next morning we felled a large fir across the swollen waters of the East Fork, just below where Winan's Station is now. When the tree was felled, though both ends were on solid ground, the natural bend of the tree and its branches trailing in the swift white waters, caused it to move sideways, and jump violently up and down. We all waited for the volunteer to take across a rope for the more timid members of the party. None immediately offering himself (for a sudden pitch into that stream, rushing down rapids, meant certain death to a poor swimmer), I well remember our leader E. L. Smith laughingly running across that wobbling tree and fastening one end of the rope securely, so that the rest of us might have the pleasant feeling of a good, secured rope in one hand. There was no trail up the West Fork, and most of that day was spent in literally hewing a way through the entangled stems of vine maple. We came out at Sandy Flat not before 5:00 p.m. We must have been almost the first persons to drop a fly for trout in that stream, for I well remember that a half hour was sufficient time to secure all the trout we could eat for supper that night and for breakfast the next morning.

And now came the time to test out Smith's statement that no one in the woods needed many cooking implements, or even any dishes, knives or forks, as he had often proved to his own satisfaction when, as a surveyor, he ran the present line between Oregon and Washington on one side, and Idaho on the other. So he limited each man to a tin cup, attached to his belt or to the back-strap of his pants, if he wore suspenders, as most men did in those days. So a huge fire having been made, and the trout cleaned, he proceeded to demonstrate his theory. The flour had already been mixed with salt and baking power most thoroughly. Now the top of the sack was opened and enough water poured in gradually, while

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WELCOME TO NEW MEMBERS

Emerald Chapter

Shirley Atwood
Dr. William H. Baker
Thomas J. Gallagher
Russell N. Holmes
J. C. Lenfest
Nan Kennedy
Robert C. & Joanne L. Martin
Pat Patterson
Tom Peterson
Reginald J. Pullen
Nancy Schaller
Jack L. & Geraldine F. Slattery
Floyd J. & Frances W. VanDervelden

High Desert Chapter

Craig MacCloskey
Lynda S. Hatch

Portland Chapter

William E. Anderson
Ronald B. Auler
Lorna T. Bullis
Nancy Fahey
Mr. & Mrs. H. R. Fehrenbacher
Gordon R. Frazier
Julia Kolkowsky
Mrs. Dorothy Leigh
Douglas Longhurst
Mrs. Florence C. Lynch
Robert P. Martin
Mrs. Priscilla A. Mosser
Dorothy & Boyd Osgood
Mark D. Shore
Margaret Steere
Rebecca T. Walker
Jonni A. Woody

Siskiyou Chapter

Tom & Dana Gentry

Willamette Valley Chapter

Barbara A. Burton
J. Stephen Shelley
Ki Treleaven

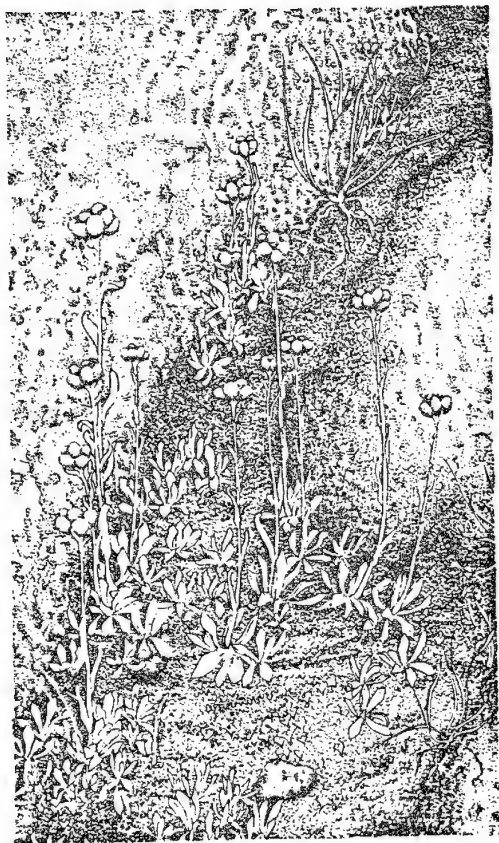
stirring went on constantly with the index finger, 'I am glad to say carefully washed! When the right consistency had been reached, and dough enough prepared for all the men, it was taken out of the sack, moulded a few minutes, and then he would tear off a hunk, and throw it to each expectant member, who caught it as a dog catches a piece of meat, by hand to be exact, and not by mouth. Then he moulded his own piece into two long cylindrical pieces, and a green stick having been cut and sharpened at the larger end with the one, common axe, he twisted one of the rolls one way round the stick, and the other the reverse way over the first, held his incipient bread out to the fire, revolving the stick constantly to keep the dough from falling off. In a few minutes the dough hardened enough to stay in place, then rose out from the plentiful baking powder, and soon, by changing sides to the fire, a good french-twist loaf was created, and of surprising palatability to a hungry man. After the bread was done, one sharpened the other end of the stick with his pocket-knife, impaled thereon a fish with a small slice (or part of a slice) of bacon attached, and proceeded to bake his fish and bacon together, adding salt if he needed it. In the meantime, the coffee was boiling in the one big coffee-pot, and the meal was ready unless you wanted tea. If you were this finicky, you made your tea in your own tin cup. A few dried apples or prunes, as dessert, finished your meal. For four days we thus subsisted, and not a grumble do I remember in the time we were out. Many may wonder why we went so poorly equipped with culinary apparatus, but when you remember that one poor pack animal carried all the blankets and supplies, the reason becomes apparent.

The next day we crossed the West Fork just above the Lake Fork, wading the stream to our waists, and on reaching the further shore, one wrung out one's socks, poured the water out of shoes, replaced both on the feet and resumed the tramp. If our tramps of the former day had been hard, the one we now passed was nearly back-, if not, heart-breaking. For miles we passed through an old burn, where the good road runs now between the West and Lake Forks, but then a jungle of Chinquapin, Ceanothus, Rhododendron, Cherry, and other bushes so interlaced that we had often to cut a way through with the axe to provide passage for our uncomplaining pack-horse and weaker members of the party, some of whom had never seen before such terrible brush. At about 5:00 o'clock we all stopped to rest our weary frames, when the question naturally arose whether this "beautiful lake" were not a myth. Two members of the party (I fail to remember who at this remote time) began to question our direction. We were following now a low hog-back and now a heavily wooded flat, while the dried rill-beds ran off at right angles to the west. The two questioning members said they were going down one of these rills, but would keep within hallooing distance "to see what they could see." They had not proceeded a half mile when Lost Lake, as we then called it, came in view. Soon we were all encamped on the margin of this beautiful body of water--a sapphire at times; at others an amethyst; at still others, when clouds are racing over it, an emerald; and set in its margin of brilliant green grasses and sedges, surrounded by the dark green of the forest. We went round to the inlet-side of the lake next day, and there went into camp for a day and a half to enjoy the evening fishing. Throughout the day we had caught, or even seen, few fish, but as the sun dropped over the western range, the fishing from a hastily constructed raft was unequalled by any other I have ever experienced in a long life of many fishing expeditions to all the streams and lakes of our country. When four of us were casting our flies from that raft towards night, each cast was rewarded by a fine trout secured, while those of the fish not successful in striking the flies literally made the surface of the lake boil! An hour's fishing that evening gave us all the fish we could use for supper and for the ensuing day. We began our return the next morning, and the second day after that we were all again in Hood River Valley and home.

On that trip, or on one undertaken a few years later, I discovered the beautiful fern, Dryopteris oregana, according to C. Christensen. Many, however, think this D. nevadensis Underwood, while others keep it under the older name, Aspidium nevadense Eaton, and I am inclined to agree with this name. (now called Thelypteris nevadensis, eds.) In bogs at the end of the lake I discovered a new Cimicifuga with Mrs. P.G. Barrett in 1882, and at another place in 1884. This is known as Cimicifuga laciniata, of Sereno Watson, a very different plant from our common C. elata, Nuttall.

In 1881, after the close of school, I invited my very dear friend, Dr. T. L. Eliot, to join me on the longest summer trip I had yet undertaken. To my great pleasure, he accepted. I bought camping equipment, had pack-saddle and bags made in Portland, sent all our materials with paper and presses up to Corvallis by stage, while we rode the two new horses I had purchased in Portland to the same destination. On reaching Corvallis, I bought another horse from a livery stable man in that place, and since he was an old packer, we had him put the pack upon our new pack-horse, and for two hours we put on the celebrated "diamond hitch" under his instruction and took it off 'till we had the art of "throwing it" quite perfect--that is for men who had never used it before. Soon after dinner we started forth, bound for Yaquina Bay. Our pack-horse had not had a pack on for a long time, if ever, we finally thought, and soon lagged behind, almost dragging my right arm, for I was leading him, out of its socket; so to remedy this I attached the long leading rope to the pommel of my saddle, and he was then forced to keep up with us, willy-nilly. However, our new pack soon began to grow looser and looser, and as it did so our pack-horse grew more restive, 'till finally the pack slipped to one side, and then under his belly. At this, he began to kick up his heels, and run around me and my horse at full gallop. He had taken one full turn about my waist before I realized what was going on. Luckily, I had my sharp hunting knife at my belt, and whipping this out, I cut the rope. Had I hesitated a moment longer, I have no doubt that python-like rope about my waist would have killed me. When I cut the rope he started off on the run and, kicking at every jump, he gradually distributed our food and the other contents of the pack-sacks for a distance of a mile. Dismounting, Mr. E. and I followed after, leading our horses and re-collecting our stores--here a sack of sugar, there a bundle of blankets, here a side of bacon, there boxes of matches, 'till finally, wearied with our burdens, we caught up with the run-away, quietly grazing by the side of the road, but looking up at us as we approached with a benign, even quizzical look on his face, as if he meant to inform us that if we tried that again, he had another ace up his sleeve! Right then we determined to change pack animals. The only one of our two other horses that would seem to serve was a little Indian pony, white with yellow disfiguring blotches on him, as if yellow paint had been smeared on him by some playful boy, and with one eye light blue, the other nearly entirely white. Certainly an unprepossessing animal to serve as a packer! The man who sold him to us in Portland assured us he was good for either riding or packing, but we bore in mind that he was a horse trader! We had so far found him a splendid animal under the saddle, but his malign countenance forbade our thinking he would be equally good under the pack-saddle. When we were all ready for a new start, we found he resented the leading rope, so, knowing his Indian antecedents, I determined to turn him loose and take a chance. When this was done he followed us like a little dog, using that mincing, even dancing, step which always betrays a good pack-animal. Before we had finished that trip, we, both of us, loved that little monstrosity, for a finer pack-animal I never saw. In fact, he had such a kindly disposition that we began to treat him almost like one of the family.

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EARLY EXPERIENCES, continued

Soon we reached that tremendous burn that ran across our road like a disfiguring scar. It was then far worse than it is today, for no conifers, and hardly any alders, had come in to hide its ugliness. At that time people were still alive who had gone through this terrible conflagration. I think I heard Governor Greer say that he was born in Oregon the year of that fire, which occurred in the early sixties. At any rate, we found that the Indians remembered it vividly when we turned off our road and stopped a day at the Siletz Indian Reservation. There some of the older Indians told us (with what truth I cannot say) that when the fire was at its height, nothing could live within its boundaries; that nearly every tree, except in protected, narrow valleys, was burned out by the roots, as we could see; that the fish were all killed in the smaller streams from the intense heat and fall of ashes; and that Indians, bear, deer, elk, cougars, wild cats, and even forest birds assembled at Yaquina Head and all available places out from the forest area, and there dwelt in perfect harmony until the great conflagration was dying down.

We stayed at Newport and Yaquina light-house for a day or two, where I found much to collect, and the third day retraced our steps to Corvallis. The next day towards night we camped on the top of Mary's Peak. There I was surprised to find many of the grasses and other flowers of Eastern Oregon, probable survivors of the time when the top of Mary's Peak was part of the great Klamath peneplain. I found so much of interest that we had determined to stay another day on our lofty out-look, but on returning to our picketed horses that evening we found our former chestnut pack-animal standing with lowered head, while his color had changed to black! Rushing up to him to see what had caused this change of color, we found him covered from head to tail with the huge black horse-flies found in forest areas. There was evidence in the trampled sod that he had kicked and jumped to try to rid himself of them, 'till almost exhausted by their blood-sucking, he was quietly being bitten to death, and I have no doubt

would have died had another day's torture followed this. The other horses had but few flies on them, and we came to the conclusion that the reason was that he was a well-fed stable animal, while they were of the hardy, thinner Indian breed. I have no doubt I killed thousands of those blood-suckers, but more appeared; so hastily packing our horses we departed. A few days after, great swellings covered every part of his body, and so much did he suffer, and so weak was he, that I dismounted and walked through that day and a part of the next to help him recover. When great ulcers formed on his back and sides, I thought we were going to lose him; but about that time, and as luck would have it, a horse-buyer caught up with us, with a quantity of good horses he was taking to his ranch in Eastern Oregon. He kindly put a salve on our horse, and then even more generously offered to exchange a beautiful sorrel, though somewhat sway-backed, for our horse, to which I readily agreed. I found him a delightful riding horse, and he was my pride all through our trip, until we reached Hood River, and there he became my almost inseparable companion for many year's jaunts.

We camped at Fish Lake one night, and there Mr. E. and I caught enough trout to feed not only the three of us, but a dozen more campers who had all had very indifferent success, since fly-fishing was an unknown art to everyone of them. The next day our kind horse-raiser parted company with us, as we determined to visit Clear Lake, about which we had heard many almost unbelievable stories. On reaching the lake and on going out on it in a small dug-out, we found to our surprise that its wonders had been underestimated rather than exaggerated. I thought I had seen clear water before in places off the Mississippi and Florida Coast, but nothing like this. I believe Clear Lake must have been formed by a gigantic slide at its present outlet, and this in rather recent years geologically speaking, since under our boat, and often at that time protruding from the surface of the lake, were to be seen great fir trees, still standing and so clear was the water that we could look down and trace the outlines of these trees from top to very bottom! In fact, as we peered down from our little dug-out, a feeling of uneasiness was always present, lest, if the boat turned over, we could not float or swim in that transparent liquid, but should sink at once to the bottom! Keeping ourselves erect in the very middle of our boat, we began to paddle slowly (our paddles consisting of merely broken pieces of board) for the outlet. When we were near this and could hear the roaring of fast-descending waters, we stopped to rest and enjoy the beauty of this lake and its setting. To our surprise we found that the boat did not stop going when we stopped paddling, and knowing that we were being sucked slowly down towards the fast-narrowing outlet, we paddled as rapidly as we could for shore. After landing with difficulty, we walked a few rods along the lake, when it seemed to empty itself out and down over the plunging rapids of the McKenzie.

The next day was a violent contrast to this day of peace and beauty, for, as we approached the summit of the Cascade Mts., a violent wind storm bore down upon us with sheets of rain, snow, and hail. Dead trees began to fall every minute, often right across our road in front of and behind us. So terrible was this summer storm that we dared not stop to rest, both on account of falling trees and from the fact that we were soaked to our skins. Finally towards six o'clock that evening we either ran out of the storm as we descended the eastern slope of the mountains, or the storm ceased. Soon we went into camp, but, even with a roaring fire burning and with many cups of hot coffee accompanying our supper of bread and newly purchased venison steak, I think it was well toward midnight before either of us was comfortably warm, in spite of piles of bedding, including horse-blankets! The next day we were where Sisters

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stands now, when we turned to the right and somewhat backwards, and followed Squaw Creek along the northern branch, and encamped at a little lake north or northeast, for we had no compass, of the North Sister. The next day we skirted the mountain at its timber line, and there hordes of new flowers awaited me -- new to me, if not to science. As a matter of fact, I found only one new variety of flower in the Sisters region, namely a branching form of *Draba aureola*, which I afterwards named var. *paniculata*, since no other specimens of *D. aureola* have this branching character. I also found here our now well-known *Phyllodoce glanduliflora*, or Sticky White Heather, as we call it in English. When I sent this to Asa Gray, it was then known as *Bryanthus glanduliflorus*; and he soon wrote me in reply "Hurrah! The first time ever known in the United States!" I may say right here, that so inadequate were our reference books to Northwestern flowers at that time, that practically all of the Western collectors, Pringle, Howell, Cusick and the author, sent our flowers to Harvard Herbarium, where the gamopetalae were reported upon by Asa Gray, and the polypetalae by Dr. Sereno Watson. Slightly later we sent our sedges to Dr. L. H. Bailey at Cornell for identification, and our grasses to George Vasey, Department Agrostologist at Washington, D.C.

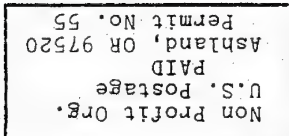
To continue with our trip: As we were collecting by and travelling along the very bulk of North Sister, the desire kept growing in me to make the ascent. By 11:00 o'clock this obsession became so great, that I determined to try it, so throwing off my coat and binding my lunch to my side, against the very sensible protests of my companion, I started along that ridge that runs up the northwestern side of the mountain. The foolishness of this undertaking may be better realized when I say that again I knew nothing of the North Sister, while I had no alpine-stock nor adequate nails in my shoes. Near the top of the mountain I found a place that I crossed with great difficulty going up, and dreaded when I came shortly after to test its difficulties in the descent. Sufficient, however, to state that I gained the top of the northwest peak of the mountain, rested a short space, then began the return, reached the place where I had my difficulty an hour before, came within a fraction of losing my life on its slopes, but succeeded eventually in reaching better footing, and by 8:00 o'clock was back in camp. I can assure you, it was a very happy meeting for both of us! The next day we reached Camp Polk, a few miles north of where Sisters now stands. There we stopped a day to recover from fatigue, then were guided over to the head of the Metolius River and by 4:00 o'clock were camped somewhere down the river where Heisings' Resort is now.

And here I must stop to tell a tale about my dear friend and traveling companion that you would hardly think consonant with his cloth and dignity. Having had but very indifferent success with the trout the previous evening, I was awakened about 4:00 a.m. with the question whether I was going to try the fishing again. I replied in the negative, saying that I doubted all I had previously heard about the many trout in the Metolius, and turned over to renewed slumbers, while my friend got up, seized his rod left standing by a tree, and was soon whipping the stream. Meanwhile I had gone to sleep and to dream, and my dream was that I was fighting with some man, and that he was unaccountably slapping me first on one cheek and then on the other, and that I was not preventing nor returning it. Finally I roused myself sufficiently to see that it was no man slapping me, but a two-foot Dolly Varden which my friend had just caught, and while still vigorously alive was being held just above my face and to the side of it, and that it was the tail of this huge fish which was administering the slaps! Needless to say, it did not take me many seconds to jump out of my blankets and join him at a magnificent pool. There, strangely enough, in a half hour's time we pulled up on the bank ten or twelve magnificent red-side trout, but not another Dolly, each fish fighting us for a minute to several minutes before, with the help of a landing net, we could get it ashore.



Only one other surprise awaited me. We had been seeing for the first time small trees of Western Tamarack or Larch (*Larix occidentalis*) all about us, but it was left for a sudden turn about 15 or 20 miles further on to bring to view a little rich cove, and in this cove five or six of the grandest trees of this species I have ever seen, even in northern Idaho where it reaches splendid proportions. Each tree was over six feet through a few feet above the base, while one reached nearly eight feet. Nothing like this appeared further down the stream, while above few trees had exceeded three feet. In this little spot, protected by high cliff-walls on every side but one from wind and fire, stood these great monarchs of apparently a former geologic age!

The next day we were in the Warm Springs Indian Reservation, and the second day after in Hood River. Just one testimonial to our little "wall-eyed" cayuse and I am through with this trip. On the trail along this most difficult river, we had found him the same gentle, careful little animal; but one place in particular was to test his genius. The day before we reached the Warm Springs we had come to a place where the Indian trail had zigzagged up a very steep hill. Right in the center of this place a two or three foot slide on the trail had occurred, and this we had to cross. Yelling back to Mr. E. to get off his horse and lead the animal with the long picket rope, as I was also doing, so if our horses slid down the 200 feet into the river, we would not necessarily have to go with them to a certain death. I squirmed my way across, while my beloved Rob Roy, following me, slipped once to his knees, but was across in a flash! Mr. E., with his fine little mare whom we had for many reasons dubbed "Silly," followed also with difficulty, and then came "White Eyes" as we called him. When he reached the treacherous spot, he dropped his head, put his ears forward, and looked over the place distastefully, but carefully. With the huge pack on his back, nearly half the size of the pony, he braced himself with his hind legs, put forth one little hoof like a kitten after a ball, felt with the tiny hoof 'till he found a slight projection in the rock-surface, and was over quick as a cat could spring!



The Editor
Native Plant Society of Oregon
Department of Biology
University of Oregon
Eugene, Oregon 97403

The NPSO Bulletin is published monthly by the Native Plant Society of Oregon incorporated under the laws of the State of Oregon. You are invited to join. Membership includes Bulletin subscription. Use the form provided on page 7 (or a copy of it) for membership applications or change of address. Send to Mary Falconer, NPSO Membership Chairman, 1920 Engle Ave. NW, Salem, Oregon 97304.

Contributions to the NPSO Bulletin or non-delivery notice should be sent to the editor. Others are welcome to use material from the NPSO Bulletin. Courtesy pleads, however, that credit be given to the author and to the Bulletin. Copy deadline is the 15th of each month.

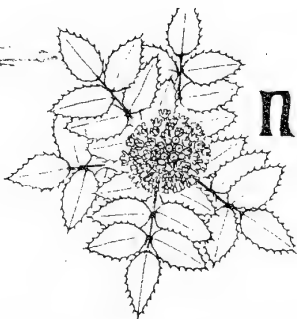
NATIVE PLANT SOCIETY OF OREGON

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NATIVE PLANT SOCIETY OF OREGON

• OBJECTIVE •

To increase the knowledge of members and public in identification and conservation of the native plants of the Pacific Northwest.

VOL. XIV No. 12

DECEMBER 1982

1981

DUES*DUES*DUES*DUES*DUES*DUES*DUES

INCLUDED IN THIS ISSUE ARE THE MEMBERSHIP FORMS FOR RENEWAL OF YOUR MEMBERSHIP IN NPSO. PLEASE FILL THEM OUT COMPLETELY, NOT FORGETTING TO MARK THAT THIS IS A RENEWAL (OR NEW, IF NEW). WE HAVE NOT INCREASED DUES FOR THE 1982 YEAR, BUT ARE OPERATING VERY CLOSE TO THE RED LINE. IF AT ALL POSSIBLE, DO TAKE OUT A MORE GENEROUS MEMBERSHIP LEVEL. MAKE OUT CHECKS TO NATIVE PLANT SOCIETY OF OREGON AND MAIL DIRECTLY TO:

MARY FALCONER
MEMBERSHIP CHAIRPERSON
1920 ENGLE AVE NW
SALEM, OR 97304

IF YOU WISH, YOU MAY TAKE YOUR FILLED-OUT FORMS AND CHECKS TO YOUR NEXT CHAPTER MEETING AND TURN THEM OVER TO THE CHAPTER TREASURER TO SEND EN MASSE TO MARY.

DUES*DUES*DUES*DUES*DUES*DUES*DUES

NPSO OFFICERS FOR 1982

According to the By-Laws of NPSO, the President is to appoint a Nominating Committee by November 15th, who are to report back to the President the nominees selected by the Committee by December 15th, for printing in the January or February Bulletin. The By-Laws say that any group of 5 or more paid members may submit names for the offices. Although the By-Laws say that the members of the Nominating Committee are to be published in the January Bulletin along with the nominees, we list them here so that any member may contact them before the December deadline:

Chairperson

Ruth Hansen 289-5832 (Portland)

Non-Board members

Marge Ettinger 382-2255 (Bend)
Ruth Rouse 276-4791 (Pendleton)
Joan Seevers 482-5492 (Ashland)
Tony Sobolik 623-2630 (Dallas)

Remember, no person's name should be suggested without the permission of the nominee. Nominee resumes are to be printed in the February Bulletin and ballots distributed with the March Bulletin.

CHAPTER NEWS

WILLAMETTE VALLEY CHAPTER

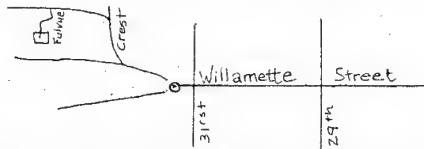
Meeting:

No December meeting. Next meeting 18 Jan. 1982. See January Bulletin.

EMERALD CHAPTER

Meetings:

Monday, December 7, 7:15 p.m. Christmas Social and Gift Bazaar. In lieu of our regular meeting at the City Library, Emerald NPSOers and guests are invited to the home of Rhoda Love, 393 Fulvue Drive (near the Wayne Morse property off Crest Drive). We'll enjoy "seasonal" refreshments and bid on an array of "gift" items. Call 345-6241 if you get lost.



We ask that each coming bring a saleable item of interest to NPSOers. Suggestions: potted plants, seed packets, photographs, books, magazines or monographs, calendars, note cards, dried arrangements, wreaths, mistletoe, maps, hand lenses, metric rulers, etc. Do not wrap the item. Come prepared to price it. If no one offers the minimum price the donor keeps it. All proceeds will go to the Emerald Chapter treasury to help finance the work of the society. Also on sale will be note cards featuring line drawings of rare, threatened and endangered native Oregon species, the proceeds helping to finance the efforts of the state R, T and E Committee.

Monday, January 7, 7:15 p.m., Slides from Australia and New Zealand. Eugene City Library. John Christy, NPSO and Emerald Chapter Treasurer, will show slides of his recent visit to Australia and New Zealand. John attended the XIII International Botanical Congress, held in Sydney, and participated in several regional moss and lichen forays. In New Zealand he collected in the spectacular Southern Alps. The region is well known for its endemic flora.

HIGH DESERT CHAPTER:

There will be no meeting in December.

SISKIYOU CHAPTER

Meetings:

December 3, Thursday, "Natural dyeing with local plants," an illustrated lecture by Carolyn Steiber. Plant specimens and yarn samples will be on display. 7:30 p.m., Room 275, Science Building, SOSC.

January 7, Thursday, "Why save native plants?" a discussion introduced by Dr. Darlene Southworth, Department of Biology, SOSC. 7:30 p.m. Room 275, Science Building, SOSC.

Meeting:

Thursday, December 17, 7:00 p.m., Central Library, 801 S.W. 10th, Portland. Show and Tell. This program will give members a chance to show 5-10 of their most unique slide pictures of flowers taken in the last year. Members wishing to participate, please call Don Barr at 246-2785 so we can schedule time in the program.

BULLETIN: REGARDING MEETING TIMES BEGINNING IN JANUARY 1982. The day for the meeting is changed to the fourth Wednesday for 1982.

Saturday workshops:

2 January 1982. No workshop scheduled.

9 January 1982. Flower Close-ups. Joe Barger. 10:00 AM, Multnomah County Library. Room to be announced. Joe will discuss techniques in photographing wildflowers. His discussion will include tips on extension tubes, flash, fast films and special lenses. If you've got questions, bring your camera.

16 January 1982. Alpines of Switzerland. Fred Dragger. Same time and place as 9 January workshop. Fred will show selections from several trips to the Swiss Alps.

23 January 1982. Endangered Plants of the Willamette Valley. Dr. Janet Hohn. Same time and place as 9 January workshop. Janet will discuss in detail a few of the Willamette Valley T & E's, so that we can all learn their characteristics and perhaps make some new sitings.

30 January 1982. Threatened and Endangered Legislation in Oregon. Ann Whitmyer. Same time and place as 9 January workshop. Ann will update us on recent political history and the current situation regarding her work in T & E legislation for Oregon plants.

ENDANGERED SPECIES LIST CORRECTIONS PUBLISHED

A list of 30 technical corrections to the U.S. List of Endangered and Threatened Wildlife and Plants was published by the Service (F.R. 9/30/81). These changes constitute amendments to 50 CFR, Part 17, 11 and 12.

In some instances scientific names have been updated to reflect current usage. In making these determinations, the Service relies to the extent practicable on the International Code of Zoological Nomenclature and the International Code of Botanical Nomenclature, and the scientific community. In cases in which more than one name are commonly used for a taxon, synonyms have been provided to avoid ambiguity. Historic ranges for some listed taxa have been updated.

The Service is preparing an updated version of the entire U.S. List of Endangered and Threatened Wildlife and Plants which will incorporate the revisions mentioned above. This list will be available in late November 1981 from the Publications Unit, U.S. Fish and Wildlife Service, Washington, D.C. 20240. from *Endangered Species Technical Bulletin*.

What a fantastic fall day to greet Hallow's Eve. The object of the trip was to view fungi, lichens and review the mosses. Two new lichens were collected for the Haag Lake area that I will publish through NPSO in Feb. or March, 1982.

Peltigera collina is almost black when wet, has dense marginal soredia, and rarely has apothecia. This was the first year since starting the survey at Haag that the apothecia were present. Also showing up for the first time were beautiful specimens of fruiting Pseudocyphellaria anthraspis. These two specimens were on the same branch of an oak with Lobaria pulmonaria. This species is a beautiful bright green when wet.

The other major interest today was in the most prolific fruiting of the good, edible, but virulent parasitic fungus, Armellaria mellea. This is by far one of the most destructive tree parasites of forests, gardens, and nurseries in North America. We saw this fungus on Rhododendron, Douglas Fir, Prunus (Cherry), Western Hemlock, White Oak, Bigleaf, and Vine Maple, and even at the base of Poison Oak. This fungus has also been seen on several species of currant, including Ribes sanguineum; all sorts of garden vegetables like tomatoes, carrots, parsnips, and rhubarb. It also invades mine timbers far below ground level, and can invade and block water pipes.

There were excellent specimens of Stropharia ambigua, a few Cantharellus cibarius, one excellent cluster of Lyophyllum multiceps. This species is very similar to that raised commercially by Sung Kum Lee of Gresham, who serves it with Asian dishes in his restaurant. Also common were many Pseudohydnum gelatinosum on twigs down in the Stokesiella oregana and Rhytidiadelphus triquetrus mosses. There were excellent dense mats of the palm tree moss Leucolepis menziesii and Plagiomnium insigne, the badge moss.

The fall colors were spectacular around the lake, but this trip should be done probably a week or two earlier when most of the good edible fungi would be at their peak ... especially Agaricus sylvaticus. I almost cried when I saw over 400 sq. meters one to two weeks past its prime.

Only Mallards were seen on the lake, but Hermit Thrush, Song Sparrows, Rufus Sided Towee, Bewick's Wren, Down Woodpecker, Winter Wren, Red Tail Hawk and Dark Junco were seen along the trail.

Glenn E. Walthall
Portland Chapter

NEWS RELEASE 11-4-81. CALENDARS

Something new appears. One out of every ten American wild flowers is threatened with extinction by man's activities. Information about the problem and how you can help, is provided in Endangered Wild Flower Calendar (10½ x 17" open, 14 color photographs), produced by New York Botanical Garden. Copies can be obtained for \$5. Funds raised will assist conservation efforts. Call chapter officers to order your copy. Suitable for gifts.

From: T/E Committee NPSO

[Included in the calendar is Mirabilis macfarlanei, endangered Macfarlane's four-o'clock from eastern Oregon and western Idaho.]

COULD PLANTS AGAIN BE LEFT UNPROTECTED?

Before the Endangered Species Act of 1973 only animals were protected by national legislation. When this law was passed, the U.S. Congress did include plants in the list of things they wanted to protect from careless endangerment and extinction. This Act applies to species on Federal land or those species that might be affected by Federally funded activities. In January of 1975, as was required by the law, a report was made by the Smithsonian Institution that named 3,187 plant taxa which were recommended for legal protection. By the end of 1980 there had been only 56 native plants officially listed.

In Oregon only 2 out of a possible 185 candidate plants have survived the long and complicated process for official listing. The added importance of this law to the flora of Oregon is emphasized when we are made aware that over half of Oregon is Federal land and even more so as we are reminded that Oregon has no state law to protect its own flora.

In the Spring of 1982 the Endangered Species Act is coming up for reauthorization. A nationwide campaign is being organized to help assure a strong act as some of the most important members of the current administration are unwilling to commit to continued protection of plants. Since it appears that plants could be left out, there is an urgency that we do what we can to aid in this campaign.

The Endangered Plant Committee of the NPSO is planning to cooperate with the Natural Resources Defense Council to help educate the public about the Act and to develop a grass-roots lobbying network. We are a small committee right now and need more active members. We also need to get a list of those willing to write &/or phone their Senators and Representatives just prior to the times of voting on the Act. It is important to include people in all four of the Congressional Districts to make these contacts.

If you are interested in being an active committee member, or if you are willing to help with this campaign, please write us.

Jeanne Huffstutter
9525 S.W. 12th Drive
Portland, Or 97219

or Chairperson: Anne E. Kowalishen
4949 N.E. 34th
Portland, Or 97212

Proposal to Make the Sunflower the National Flower.

Mr. Mark Askew of Sacramento, California, has initiated a proposal now introduced as bills in the Congress to make the Annual Sunflower (Helianthus annuus) the official flower and floral emblem of the United States. Some of his reasons are that the annual sunflower: is the only important food plant domesticated by American Indians in what is now the United States of America; is now become again an important crop in its native land; is grown in all of the states in some of its forms; and that it has various forms valued as crops, ornamental garden flowers, and wildflowers. Botanists may want to let their Senators and Representatives know of their interest in these bills.

From: Plant Science Bulletin
October 1981

BOOK BARGAIN FROM UW PRESS!

If you have always wanted the five-volume set Vascular Plants of the Pacific Northwest, but couldn't afford the \$137.50 list price, it is now on sale for \$82.50 for the complete set. For a catalog with order form, write to:

Univ. of Washington Press
P.O. Box 9785
Seattle, Washington 98109

ACT FAST; the sale ends January 31, 1982!

Oregon Natural Heritage Plan Approved by Legislature. Natural Heritage Advisory Council Embarks upon Implementation. The council, as directed by statute, will work with state and federal agencies and private parties in developing protocol for setting aside and dedicating Natural Heritage Conservation Areas. Copies of Oregon Natural Heritage Plan can be obtained by remitting a check or money order for \$4.00, payable to Natural Heritage, 1445 State St., Salem OR 97310.

A thank you to KGO-TV: Five public service announcements aired for the period of 7/1/81 through 9/30/81. Total cost \$875.00. NO CHARGE!

ECOLOGICAL NOTES

The Cogswell-Foster Reserve - a Nature Preserve in the mid-Willamette Valley

One can make ecological observations almost anywhere and anytime. For ecological research, on the other hand -- especially that which continues for a span of years -- an important requirement often is that the study area remain relatively free from major man-caused disturbances. For this reason, a field ecologist often chooses to work in designated Research Natural Areas or on Nature Preserves, where his/her work will, hopefully, not be suddenly disrupted by human activities which are beyond the worker's control.

One very important Nature Preserve in the Willamette Valley is the Cogswell-Foster Reserve. This Preserve is located in Linn County approximately midway between Corvallis and Eugene. The Cogswell-Foster Reserve (hereafter called the CFR) was acquired by the Nature Conservancy in 1969 and was named for the donors, Lee and Lucille (née Cogswell) Foster. The CFR is a 36-hectare tract of former pasture and farmland located on Powerline Road just southwest of Halsey. The Little Muddy Creek meanders through the Reserve which is at present almost completely surrounded by commercial grass seed fields.

The CFR has some stands of 100-year-old Oregon Oak (Quercus garryana), and in wetter areas, stands of Oregon Ash (Fraxinus latifolia). The Reserve has been invaded by some naturalized introduced shrubby plant species -- especially by English hawthorn (Crataegus monogyna). The CFR also supports a population of hawthorns which are hybrids between the English hawthorn and our native hawthorn (Crataegus douglasii).

In addition the Reserve provides food and cover for deer, foxes, beavers, turtles, various rodents, approximately 45 species of birds, and numerous smaller animals such as butterflies and other insects.

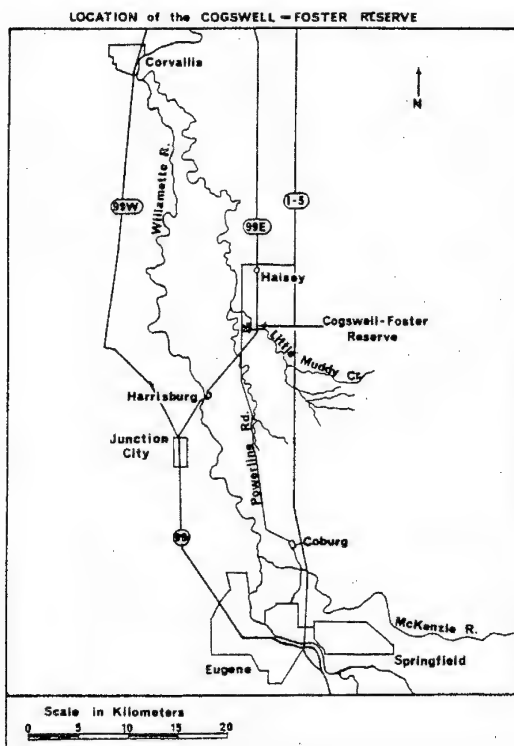
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SECTION 6 FUNDS CEASE; STATE PROGRAM SUMMARIZED

The Spring wildflower display is not overly spectacular but includes such beautiful species as: Delphinium menziesii, 4 spp of Ranunculus, Cardamine penduliflora, Lupinus sulphureus, Sidalcea campestris, Eryngium petiolatum, Apocynum medium, Brodiaea coronaria, Camassia quamash, and Erythronium oregonum. (A list of all the flowering plant species collected at the CFR has been prepared by G. ee Goodrich of the Emerald Chapter of NPSO.)

The CFR is an ideal area in which to study interactions between native and introduced plant species, and plant colonization of former agricultural land. In addition, with the large oak population, research on oak-insect relationships could be carried out there. For example, details of the life cycle of the cynipid wasp which causes the globular oak galls are mostly unknown and could be investigated at the CFR.

In Science for October 26, 1979, an interesting paper by R. T. Holmes et al. (pp. 462-462) shows that when birds were kept away from maple trees, moth larvae were significantly more abundant than on trees left open to bird predation. Such a study could easily be repeated using various tree or shrub species at the CFR.



For naturalists of all kinds including plant and animal lovers, bird watchers, and ecologists -- observers and researchers -- the Cogswell-Foster Reserve is a valuable Nature Reserve located conveniently close to most of us who live in the Willamette Valley. For more information, lists, maps, etc., call the Nature Conservancy in Portland, or Rhoda Love (503-345-6241) in Eugene.

Rhoda Love
Emerald Chapter

September 30, the final day of fiscal year 1981, also marked the end of a five year grant-in-aid program of the Endangered Species Act of 1973. Termination of this program, to assist states in endangered species conservation efforts, was effected by Congress as part of the 1982 budget-trimming procedures. Twenty-four million dollars in matching Federal funds were given over the five year period to states having cooperative agreements with the Fish and Wildlife Service. Only 1% of funds distributed were allocated to plant surveys. For more information, see the Endangered Species Technical Bulletin, published by the Department of Interior U.S. Fish and Wildlife Service, Endangered Species Program, Washington D.C. 20240. L.A.V.
[Because we do not have an Endangered Species Act, the state of Oregon did not receive any of those funds.]

PLANT FAMILY PROFILES

By Herm Fitz

The Aristolochiaceae - BIRTHWORT FAMILY

The Birthwort Family is primarily tropical, but extends into the temperate zones in Africa, Eurasia and both North and South America. No representatives occur native to Australia. Seven genera with some 625 species (Moore, 1978), mostly herbs and shrubs, often scandent, inhabit forests within their range. Three genera are monospecific: Saruma of China, Holostylis and Euglypha of Argentina, Brazil, Bolivia, and Paraguay. Ten species of Thottea and 12 of Apama occur in Malaysia and eastern India. Some 100 species of Asarum inhabit temperate Eurasia and North America. But the bulk of the family, Aristolochia, with about 500 species, are spread throughout tropical and temperate Eurasia and North America. Oregon is home for only 3 members of this family, all in the genus Asarum. Most widespread is the common Wild Ginger (A. caudatum), on cool shady forest floors from British Columbia to California; more restricted is the Marbled Wild Ginger (A. hartwegii) on drier, rockier, but shaded slopes in the coastal and Cascade Mountains from Douglas County south to northern California; narrowly endemic and known only from the Mt. McLaughlin-Lake of the Woods area in Jackson and Klamath Counties, is the Green-Flowered Wild Ginger (A. caudatum var. viridiflorum), listed as rare and threatened (Siddall, Chambers, and Wagner, 1979).

Members of this family have alternate, simple, often palmately-veined leaves, without stipules. Flowers are bisexual, axillary, solitary (ours) or in racemes or cymes, mostly zygomorphic (Aristolochia, Holostylis, Euglypha), but also actinomorphic (the others, including Asarum). The calyx is 3-4 lobed, usually enlarged, petaloid, and even of bizarre trumpet-like or bell-like shapes. The corolla is almost always absent (present in Saruma). Stamens vary from 6 to 40, in 1 or 2 rows, are free, connate below, or even adnate the style. The pistil is single, with an inferior ovary of 3 to 6 locules and the same number of stigmas. The fruit is a many-seeded capsule, the seeds being quite small.

Our ordinary Wild Ginger is a typical member of the family and produces its green-brown-purplish flowers on the ground, often beneath last fall's leaf litter. This is not a strange place to bloom, because the plant pollinators are various ground beetles and carrion beetles following its mildly fetid scent. The long-petioled, heart-shaped leaves of this creeping vine-like perennial announce its presence, and, upon parting the dead leaf litter, one finds the freely-rooting stem, at the tip of which, from between two leaves, blooms the solitary flower. In our Wild Ginger there are 3 spreading elongate sepals, no petals, 12 stamens (6 long and 6 short), and the single pistil of 6 carpels.

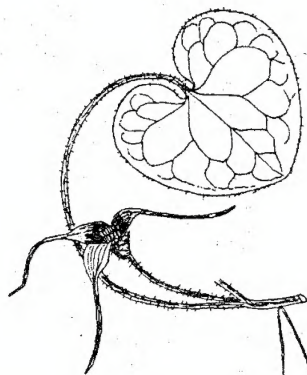
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Phylogenetically this family is difficult to place. It shows obviously advanced characters as the united carpels, inferior ovary and loss of petals; however, pollination by ground beetles is considered to be primitive. Pollen features and the presence of cells containing essential oils indicate an affinity with the Magnolia Family. Economically the family is known for many species of Aristolochia and Asarum cultivated for their interesting flower shapes and variegated leaves. Dutchman's Pipe (Aristolochia macrophylla), Bird's Head (A. ornithocephala), and Pelican Flower (A. grandiflora) are among the better known.

The specific floral formula for our species of Asarum can be given:

$Ca^3 Co^0 S^{6+6} P^{\textcircled{6}}$ with inferior ovary.

When you encounter a low-growing, trailing and mat-forming herb with large, heart-shaped leaves, and if you uncover from beneath last fall's leaf litter a purplish, 3-parted flower, you know you have found the Wild Ginger, Oregon's only representative from the Aristolochiaceae - the Birthwort Family.



Wild Ginger (Asarum caudatum)
Note the three elongate sepals of the ground-blooming purplish flower and the conspicuously veined heart-shaped leaves.

EARLY EXPERIENCES OF A BOTANIST by L.F.Henderson
continued from November 1981 Bulletin

Thomas Howell, then living at the homestead on Sauvie's Island, just where the Willamette joins the Columbia, was a great friend of mine, and I had visited him frequently, rowing down the river from Portland, staying with him, hunting ducks and geese or studying plants Saturdays and Sundays, 'till it was time for me to row back to Portland for my classes on Mondays. So in 1882, he proposed our taking a trip together in his express wagon, first down to Tillamook Bay, then back and up to Mt. Adams. We set out a bright day in June for McMinnville, thence crossed the Coast Range by the old wagon road over the mountains, and camped one night on the Trask. While catching a mess of trout for supper, it was my good fortune to run onto a peculiar Rosaceous plant about two feet high. I took it back to Howell to see whether he knew it, as he had collected in the Coast Mountains far more than had I, and consequently was more acquainted with their flora. This was the first time he had seen it, so we collected it in quantity. Later we sent it on to Drs. Gray and Watson, and the latter named it Filipendula occidentalis. By many this genus has been reduced to Spiraea, but Filipendula holds the field again.



Decumbent: Reclining but with the tip ascending

(by Ed Paulton from the Fiddlehead Forum
Bulletin of the American Fern Society)

The next day we were soon in the town of Tillamook, consisting of but few houses at that date! We left our team of horses and wagon at a livery stable, hired a row-boat, and were soon rowing down to the spit, where now is Bay Ocean; but at that early day there was not, as I remember it, a single habitation showing from the water on the whole bay, save a little hamlet of a very few houses at Garibaldi. We went into camp just above high tide, and soon found that the "fly in our ointment" was to be on the one hand mosquitoes, on the other lack of good water. The first we had to endure day and night; the second we overcame by digging with our spade a hole in the sand close up to the spruces, where moist sand alone showed the presence of underground water. Here we lived for two days literally combing the dunes, tide-lands, and even shallows for specimens. Most of the plants we gathered were already known to the books, but a few were new species, as we afterwards found out. Among these were the grasses Poa macrantha and Poa confinis, both named by Vasey, and Sanicula howellii, of Coulter and Rose. At the end of our two days, wishing for a good meal of rock-oysters, for which we had heard Garibaldi was noted, we broke camp and rowed across the outlet to the bay. Very foolishly we took a strong ebb-tide and only by most vigorous rowing did we escape being carried out to sea. After dinner we waited for an in-coming tide, and made our way back to Tillamook. The row back, as well as out, though long, was hardly tiresome, so busy were we in noting the bird-life. In fact, at this early day, our advancing boat was always heralded by flocks of ducks which rose in front of us, circled and then dropped just back of us. The whole surface of the bay was almost covered by these hordes of ducks of dozens of species.

We returned to Sauvie's Island to dry out and deposit our large collections, and then proceeded up the Columbia, mainly by wagon over the old road, and finally reached the ferry at Hood River. Near the great rock-slide we discovered on the rocks that peculiar, light-colored grass, known as Calamagrostis howellii, and named by Vasey. The next day we were across the Columbia and on the way to Camas Prairie. On reaching the north end of the valley, we turned westwardly towards Mt. Adams, expecting to find the "good road" for our team and wagon, about which we had been so repeatedly informed since leaving White Salmon. While the yellow pine woods lasted, all went well--the trail forcing us only occasionally to go around some fallen tree, which was easily accomplished in those open, grassy woods. As we ascended the mountain higher and higher, the pine woods gave out, while fir, white pine and mountain or black hemlock took their places. More and larger trees were now across the trail. At first we tried to go around these, but the brush becoming at times impenetrable, we became exasperated by the delays, and finally Howell himself made a most surprising proposition. It was that we both get out and walk, he driving the team and I catching hold of a wheel and helping team and wagon over the logs! As the wagon itself

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EARLY EXPERIENCES, continued

was comparatively new and well-made we thought we ran little risk of breaking it to pieces, especially as our load was almost of no weight. So we proceeded for several miles, he whipping up the team when we came to a log, which was practically every minute or two, the horses jumping the log with their front legs, then yanking over the front wheels as they cleared the log with their hind legs, and then, with bumping and crashing, pulling over the back wheels, I all the time assisting with arms and shoulders to keep the team going. This we found was the main point, for if they halted when only the front wheels were over, it was almost impossible to get the hind wheels to follow, if the log was several feet through, as many of them were. Thus, by very exhaustive work, we were able to reach the snow line and a most beautiful camping spot by night.

And the glory of those subalpine and alpine slopes of Mt. Adams at that early period! Stock, especially sheep, had not ruined the native pasture at that time, and there were succulent bunch- and other grasses up to your knees. Now these grasses have largely vanished under over-pasturing, and often you can barely find any sustenance for your horses if you wish to camp there. Probably the most beautiful and succulent of these grasses is Festuca viridula, then a new species and found by us for the first time on Mt. Adams, though Suksdorf, who was up there at the same time with a band of sheep, first sent it to Vasey. This grass and some of the other bunch-fescues and Poas were then so abundant on the open slopes that a horse when picketed amongst them by a forty-foot rope would eat his fill and lie down without finishing his forage within the radius of his rope. Now one has often to travel miles before he will see a stalk of these grasses and then only when protected by rocks or brush. On this same trip we likewise found the then unpublished Prickly Gooseberry, named Ribes ambiguum by Watson, but later changed to Ribes watsonianum.

Here we camped for nearly a week, sometimes working together, and as often solitary on our tramps. Many of the plants were old friends I had seen in '78 and '79, but most of them, on account of later season, were new to both of us, and hundreds of plants were added to our collections. As Thomas Howell was supporting himself almost wholly by the sale of his collections, while I had my regular teacher's salary, I always allowed him to send off what collections went East for naming, as anything new, or even rare, brought the most money in the plant market. We were much surprised to find, when names came back to us from our collections, how very few were new from the high mountains, since the alpine and subalpine floras have a great kinship, whether collected in California, Oregon or Washington, or even in British Columbia and Alaska. This can be directly attributed to the glacial epochs when this flora was driven further and further south by the glaciers and was the only one to survive.

The tramp of one day is still fresh in my memory. While Howell took one of the lower areas for the day, I proceeded over the glaciers and snowfields to that protuberance, really a young volcano, on the eastern slope of the mother-mountain, sometimes called Red Mountain, often Little Mt. Adams. I took right up the glacier, and, in my ignorance of snow mountains which was still profound, I crossed many snow bridges over crevasses, some of which had fallen in when I returned at the end of a very hot day. When I looked at some of the places I had crossed only because they were then frozen tight, and now saw how many of these bridges had fallen in since I first crossed them, and as I now, late in the afternoon, looked down into their blue-black depths, I shuddered at the death I had escaped as well as at my supreme ignorance of alpine dangers. That at any rate taught me to keep off all glaciers which are at all cracked and still covered by snow. Soon I was off the glacier and proceeding up a hog-back of loose material. I soon reached a level field just west of the red cone. Here a riot of color and new plants pressed close to the ground awaited me, and I spent several hours in this locality finding almost every few steps some delicate little thing blooming far above the glaciers and snow fields, and which were all new to me. While busy gathering these plants and putting them in my press, I looked over a slight ridge and there I saw for the first time in their native habitat a band of mountain goats. The wind was luckily from them to me, so as some very large boulders were between us, I determined to drop my pack and creep along on my knees and belly, keeping the rocks between us and see how near I could get to them. By a change of rocks every now and then, I was able to come remarkably close to them. Finally, taking off my colored hat, I peered over a rock. I must have made some slight noise in my crawling for they were all standing and staring at the rock not ten yards away -- a great billy-goat in front, his yellow eyes blazing with what I thought then was anger, but later proved to be suspicion and fright. I suppose I was the first human being they had ever seen approaching them from that direction. As I thought, the huge beast, his neck-ruff standing up on end, was about to charge down upon me. I rose suddenly, waving my hat in the air and hallooing. At that, with a sharp whistle from the leader, they all faced about and then dashed for and over a cliff to their certain death, it seemed to me. Running up to the cliff, I looked over. It dropped thousands of feet to the Klikitat Glacier and stream below, and I could see no trace of my goats. "Suicide from sudden panic," I muttered to myself. Then looking more closely, I could see a shelf of rock running downward along the right hand cliff not more than a couple or possibly three feet wide in places, and on examining the approach to this, I could see plainly the marks of their scampering hoofs. So down that narrow shelf, along that dizzy precipice, they must have dashed, pell-mell, for they were out of sight before I reached the edge! A few days after we began our return to Hood River by the same trail we had used a week before, but with slightly easier going since it was mainly down hill and also the second attempt at this novel method of crossing fallen timber.

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In the early summer of 1883 I married Miss Kate Robinson, a teacher like myself in the Portland schools. As our honeymoon trip we spent a few weeks on the numerous lakes south of Tacoma, an almost uninhabited country at that time, though now filled with beautiful country houses. Thence we travelled to the Chehalis Indian Reservation to visit my brother, then Indian agent, and with him took a trip up and down Black River. This was a novel experience to my wife, though not to us men, as the river was too narrow and log-filled to admit of using oars, while it was in many places too swift to use paddles. Nearly the whole of the trip was, therefore, taken in a dug-out, using paddles in the wider stiller reaches of the river, but part of the way down and practically all the way back, a day each way, we used poles, I on one side, my brother on the other. I had enough to think about in guiding the canoe, so I collected almost nothing on this trip, especially as most of the flora I had already had from about Portland. It will be noticed that I have spoken only of the longer trips so far; yet many spring and early summer days were spent in quick trips by foot, often by train, to near-by or even distant localities. One might wonder how a teacher ever got enough money together to take many trips by train or boat, but bear in mind that those were the halcyon days when passes to scientists were in vogue, as well as to many not so worthy causes and individuals. Noting my desire for botanical research, and the slimness of my purse, many of my older friends in Portland, notably D.P. Thompson, J.N. Teal, Henry Failing, and Senator Corbett, spoke a good word for me to heads of railway and steamboat lines so that I often had in my pockets passes over every rail line and most of the boat lines, even those to Alaska. Unfortunately the latter I never used, as other expenses beyond mere traveling ones would have prevented my using them to Alaska. Yet, I may add, I was always scrupulously punctilious in the use of these passes. I had inherited one of these awful New England consciences from my mother, and so I always paid my own way when not on botanical work, though my pocket was full of passes-- this often to the scorn of some of my friends who considered such action ridiculous. Yet in their hearts I believe most of my friends considered it as an act of common honesty; I am sure the rail-road heads did when they heard of it.

My regular plan during the spring, while I was still teaching, was to rush home Friday afternoon after work was done, hastily change into working clothes, and then "jump a train," sometimes literally. I would travel 'til daylight was breaking in the morning, work all day collecting, and then board the first night train, passenger or freight, for home. That method of operations often gave me from two or three in the morning to nine o'clock at night, or a day of 16 to 18 hours, which I believe most people would agree was long enough. This was sometimes in Eastern Oregon and the Blue Mountains, sometimes in Southern Oregon. Every few weeks I would find some new plant, which would repay me for all my labors. Among these were that handsome sedge from sunny bogs in Multnomah County called by Bailey *Carex hendersonii*; the beautiful vari-colored Lamb's Tongue, *Erythronium hendersonii*, of Watson, from Josephine and Jackson Counties; the northern Yellow Brodiaea, *Brodiaea hendersonii*, of Watson, from the same counties.

During the spring of 1884 I suggested to my wife, "I saw a lot of plants between here and Forest Grove when on my trip with Howell in '82, that I am not sure that I know. How would you like to take a walk from here to Forest Grove one day, and back the next, and do you think you could stand it?" "I think I can stand as much as you can," she bravely countered. So one bright day, early in the morning, we started, and before night had reached the hotel in that city. Here we were kindly called on by both the Professors Marsh. The next day, at break of morn, we started on the return trip, reaching Portland before 7:00 p.m., tired, but delighted with the beauty of the scenery, while my pack was overflowing with specimens. The one I had desired most was a Bird's Bill, which we obtained in both mature fruit as well as flower. When I had studied this carefully, I saw it had never been described, but sent it on with notes to Dr. Asa Gray. Soon the reply reached me, in which speaking of the Bird's Bill or Dodecatheon, he said, "Your notes and specimens of different Dodecatheons have caused me a couple of hard days' work, with an entire revision of the genus, soon to be published." When the revision came out, I found that my renamed Dodecatheon bore the name of *D. hendersonii* A. Gray.

During that summer my wife and I took a trip, she on horseback, I leading a pack-animal, to Lost Lake and thence by a very obscure trail to the snow-line of Mt. Hood. I was much disappointed with this trip, since I do not remember finding a new plant, while the hardships and experiences we went through were enough to pretty nearly fill a lecture. Suffice it to say of these latter, that we went one day from dinner time to the next evening without a drink of water or a bite to eat!

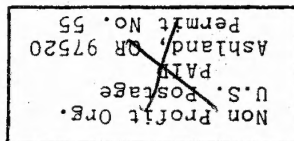
The next three summers were spent mainly at Ilwaco on the Washington coast and at Seaside on the Oregon, since our two little daughters were happiest there, while the parents found much to do and to enjoy. At the first of the places I suppose I was the first botanist to collect the flora, for the sands of the beach yielded me the peculiar sand-binding sedge, *Carex pansa* Bailey, and the little bog-rush, *Juncus oreganus* Watson; while the bluffs near the ocean gave me the big, woolly umbel, *Angelica hendersonii* Coulter and Rose, and another slightly smaller umbel, *Coelopleurum maritimum*, of the same authors. The year we spent at Seaside I discovered up the Necanicum a slight distance, or on "Clatsop Bay" as I see I called it, the pretty, remarkably smooth marsh mallow, called by Watson, *Sidalcea hendersonii*. This I afterwards found at Cannon Beach, and still later further south at Florence. A spring trip, which I took to Ashland and Ashland Butte in 1886, yielded me a new rosaceous plant named by Howell, *Horkelia hendersonii*. I likewise found, also near Grants Pass, a very peculiar member of the Leguminosae or Pea Family, and called *Astragalus hendersonii* by Watson. This plant has ripened pods simulating unhulled peanuts to a remarkable degree, which latter plant, to add further interest to the similarity, is also a member of the Leguminosae, but ripening its pods underground. After a few years, it was found by Sheldon that there was already an *Astragalus hendersonii*, belonging to the old world, and named for another man; so naturally this old name could not stand when applied to a new plant, and Sheldon renamed it *Astragalus pacificus*.

to be continued in the January 1982 Bulletin





CAMPUS MAIL



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